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# Southern Medical Journal

## Journal of The Southern Medical Association

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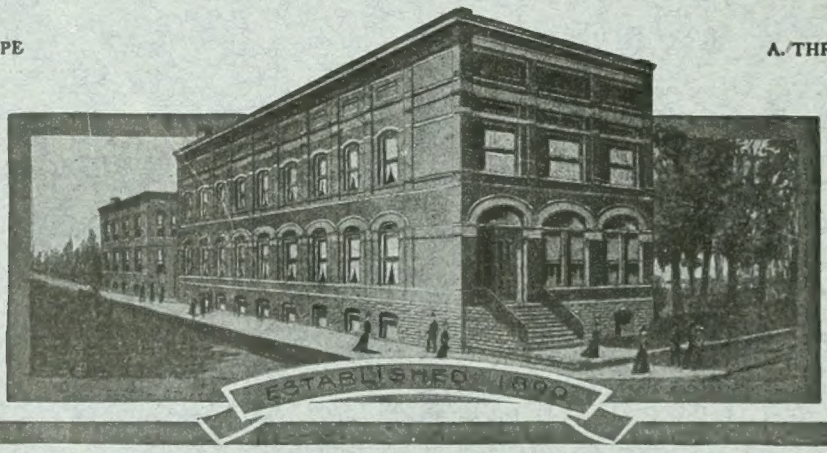


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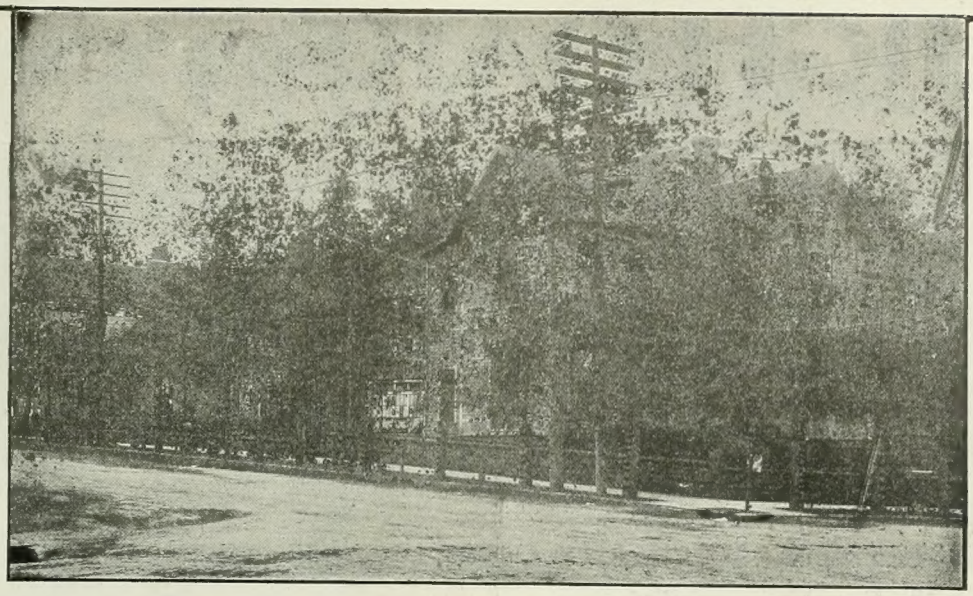

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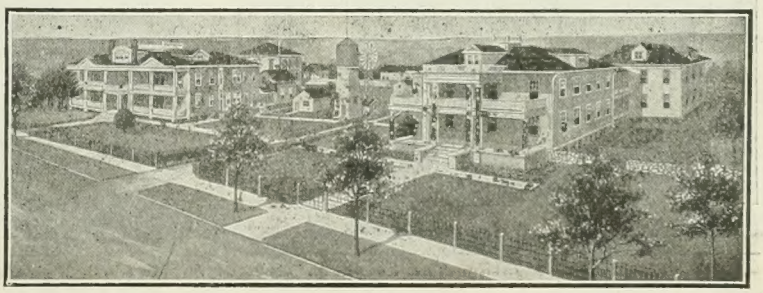

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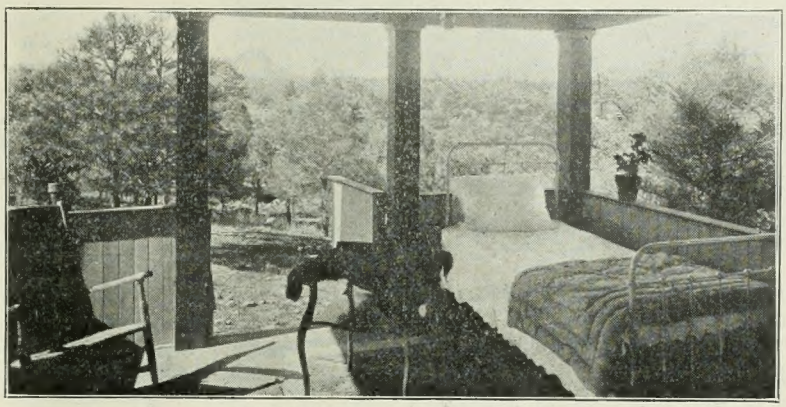

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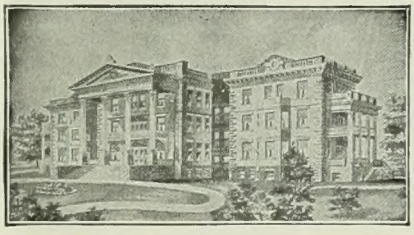

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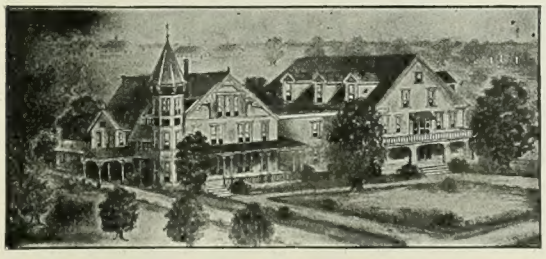

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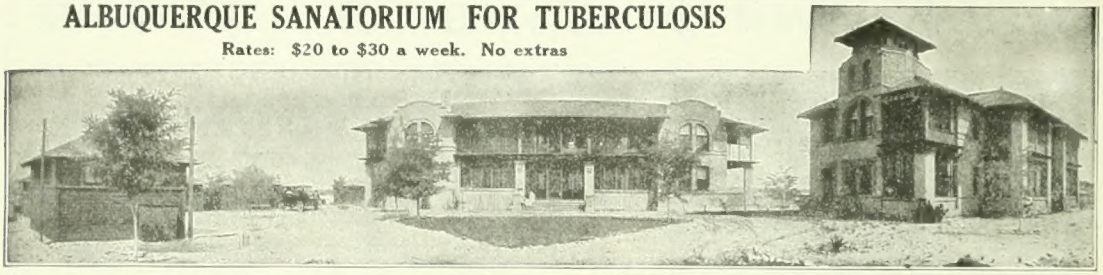

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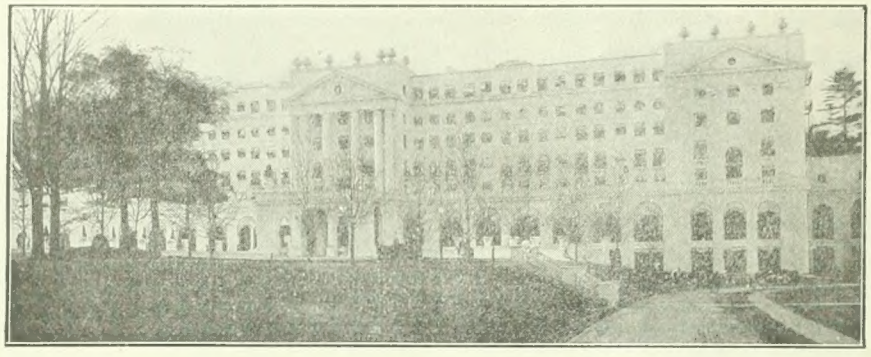

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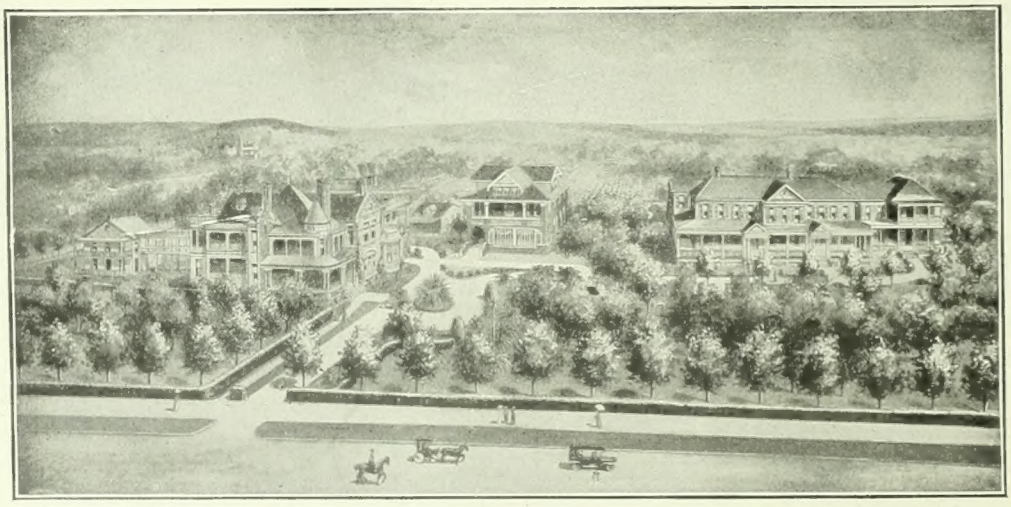

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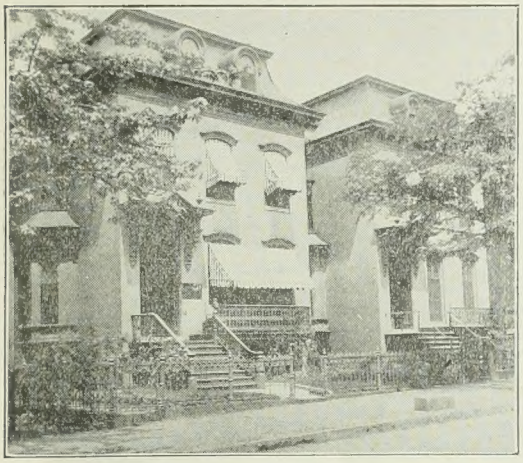

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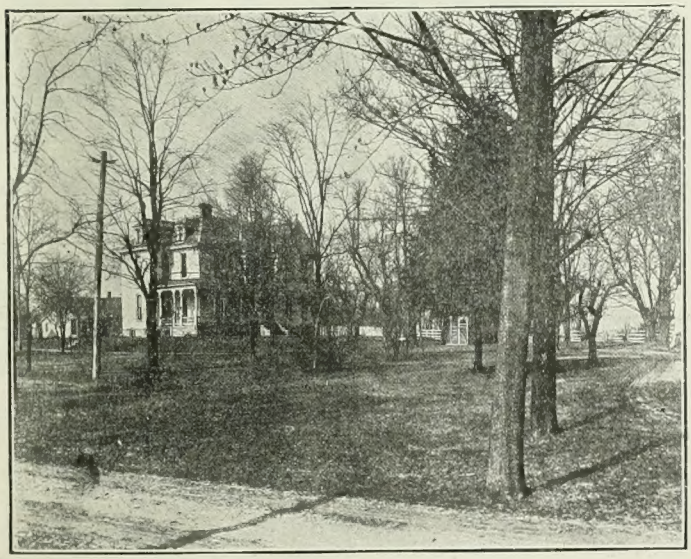

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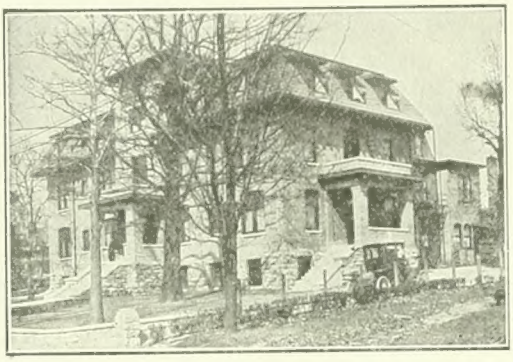

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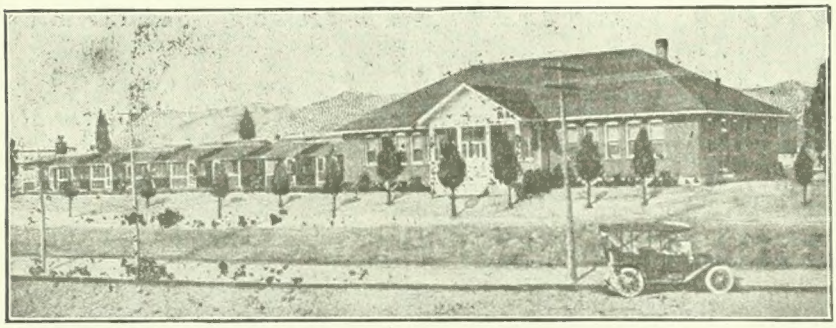

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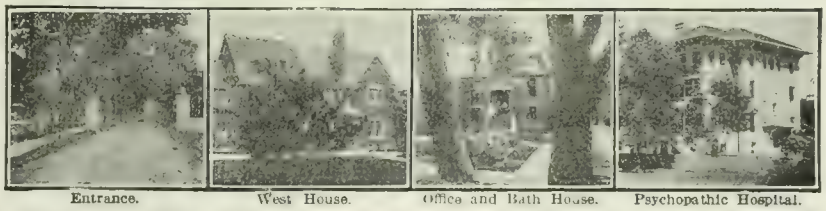

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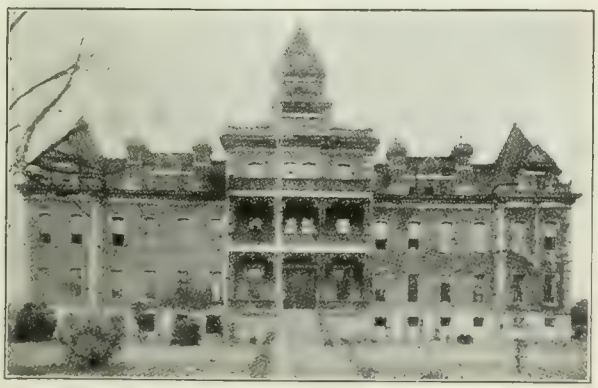

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## ORIGINAL ARTICLES

### THE VALUE OF AND NECESSITY FOR AN EARLY DIAGNOSIS IN ALL MALARIAL INFECTIONS.*


By GRAHAM E. HENSON, M.D.,
Jacksonville, Fla.


It is the opinion of the writer that if the mortality from malaria was 25 per cent, instead of less than 1 per cent, that the disease would have been totally eradicated, at least within the temperate zone, many years ago. If we read in our morning paper that ten thousand people had lost their lives in some fearful catastrophy, and that one hundred million dollars had been paid as a further toll to this disaster, we would gasp in horror; but I ask you, gentlemen, is it any less horrible when this loss is spread over a year's time? May we not rather ask ourselves as medical men if it is not even more horrible when we allow a preventable disease, such as malaria, to exact this toll from the United States every year—not last year, or some year a decade ago, but every year, for we are within the limits of conservatism when we place the economic loss to this country at these figures for the past many years. Osler[1] writes: "No infection except, perhaps, tuberculosis compares with it in the extent of its distribution or its importance as a killing and disabling disease." With the discovery by Laveran, in 1880, of the plasmodia in the blood of patients suffering with malaria, the demonstration by Ross of the correctness of Manson's theory that the disease is communicated to man by the mosquito, MacCallum's classical work on the sexual forms of the plasmodia, together with the more recent work of Darling[2], showing that these sexual forms can, by proper treatment, be eradicated from the circulation of man, together with the knowledge that gametes can never even form in the blood of man if the original infection is properly treated, renders the eradication of malaria simply a matter of education on these fundamental principles. When we consider in conjunction with these principles that the sporozoites and other forms of the plasmodia cannot exist in the body of the mosquito when the temperature reaches a level of 60° Fahr., it is not hard to prophesy the complete eradication of the disease, at least in the temperate zone, when we all make proper use of this knowledge and with intelligence combat these infections as we should.

To successfully combat any disease a thorough knowledge of its etiology is essential. Yellow fever lost its terrors when we knew the part played by the stegomiae, bubonic plague will probably never become epidemic again with the knowledge that the pulex cheopis conveys the bacillus from rat to man, even before the days of vaccination against

*Read by invitation before the Alachua County Medical Society at Gainesville, Fla., March 10, 1914.

typhoid fever the knowledge that it is a water-borne disease helped us not a little in combatting this infection; the same may be said of Asiatic cholera, and so on through all the list of communicable diseases is it shown that we must understand the etiology before we can expect to successfully cope with any of them. There is little doubt that a prominent factor in the continued endemicity of the malarial fevers is the fact that while all medical men will concede the disease is transmitted by the mosquito, there is not a clear understanding of all the phases of the evolution of the plasmodia in man and the mosquito, or how the change from one host to the other is effected. Let us follow therefore the principal stages of evolution the parasite undergoes in man, later in the mosquito, and how the change from one host to the other is effected, demonstrating how a break in the cycle at any point in either man or the mosquito would have to mean the complete eradication of the disease.

With the bite of infected anopheles, sporozoites, lodged in the salivary glands of these insects and free in their saliva, are injected into the circulation of man. These young forms immediately assume ring shapes and the asexual stage of the parasite is under way. This cycle is referred to as the human cycle, the asexual cycle or the schizonic cycle, and embraces all the changes the plasmodia undergoes in man's circulation. It is a separate and distinct cycle to that which takes place in the body of the mosquito, to be described later. The parasites at different stages of development take on certain definite and well-known forms, producing characteristic changes in the corpuscles infected, and form a definite blood picture. The young hyaline ring forms vary, as do the older forms of the parasite, depending upon the particular species of plasmodia; have different staining qualities, vary in their morphology, and produce, as stated previously, characteristic changes in the red cells. As evolution proceeds the parasites enlarge, mobility increases or decreases, depending upon the type, pigment and chromatin increase, while the distribution of these constituents vary, depending also on the type of plasmodia. As the presegmenting stage is reached the chromatin gathers in clumps, pigment granules being distributed throughout the organisms. As the end of the human or schizonic cycle is reached many separate minute organisms may be seen to have developed within the parasite, having the appearance of the small ring form from which the mature organism evolved; these are known as merozoites. As sporulation is completed rupture takes place and the contained merozoites, numbering from six to twenty-four, depending upon the species, are liberated. It was formerly held that these minute parasites became free in the blood plasma and entered other red cells at their will. Bass[3] has, however, demonstrated, during his experiments with the plasmodia in vitro, that these young merozoites die almost immediately when free in the plasma, and contends that only those able to enter red cells as a result of direct contact with them at the time of sporulation survive and are able to continue the process of schizogony. We do know that certain of them are able, in some manner, to re-enter red cells and that they do continue for a more or less indefinite time the cycle referred to as the human cycle. This cycle is repeated and repeated until treatment is instituted or nature sets up a natural resistance to further sporulation. We have not at this time a clear understanding as to why these organisms do not go on multiplying and multiplying, one sporulation following another until the patient would have to succumb to the amount of toxines generated. We do know, however, that certain cases of malaria will, without any treatment, *apparently* get well. I emphasize apparently, for, unfortunately, under the treatment instituted by a very large number of physicians the cure of their malarial patients, while apparent, is not real—it is not complete. Only in a difference of degree does the physician, in many instances,

do any more than nature would. What is the actual condition found in the blood of patients having become infected with malarial organisms, in cases where no treatment or improper treatment has been instituted? Upon careful examination of their blood it will be found that the parasite is continuing its indefatigable cycle, not in sufficient numbers to produce clinical symptoms, but in sufficient numbers to keep the infection alive, when, following any condition that reduces the patient's resistance a relapse occurs, an exacerbation of all the previous clinical symptoms takes place and the parasites are again actively sporulating. It is this phase of the disease that often causes scepticism regarding the manner in which malaria is contracted, for persons many miles at sea or in sections where there are no mosquitoes, showing a true malarial infection, are unaware that they are constant harbingers of the plasmodia and do not realize that the exacerbations are simply sequelae of original infections contracted, possibly many years previous, during residence in infected mosquito sections of the world.

While relapses, which are the direct result of improper treatment, are serious in themselves on account of the inconvenience to the infected individual, a more serious aspect is the fact that these individuals are a source of menace to the community in which they reside. Why? The malarial parasites, like other protozoa, reproduce asexually while conditions favor their reproduction in this manner. Just as soon as conditions become unfavorable an attempt is made to reproduce sexually. Conditions for asexual development of the plasmodia become unfavorable under two circumstances—when schizogony uninterrupted by medication has gone on a sufficient time to render the individual immune, for the time being at least, or when it has been interrupted by insufficient or improper medication. This brings us to the consideration of the formation of gametes, as they are called, the sexual forms. It was originally held by the majority of authorities that sporozoites of a particular type later developed into the sexual forms, that is, that there were two types of sporozoites, certain ones producing the asexual parasites, others—the sexual forms. Schaudinn advanced the theory, which is now universally accepted as a fact, that there is but one type of sporozoite and that after a certain time the action of the human host causes the asexual parasites to undergo an evolutionary change and assume sexual forms. This is what takes place under the conditions I have referred to, so that we see in the blood of these patients the male and female gametocytes, the male being known as the microgametocyte; the female, the macrogamete. It should be thoroughly understood that while these forms develop up to this point in man, further evolution cannot take place until they reach the stomach of the mosquito. A person may be in apparent good health for months or possibly for years without having clinical manifestations of malaria, yet be carrying these forms in numbers sufficient to infect every anopheles that happens to bite them.

Let us now follow the cycle that takes place in the mosquito. The insect feeding on the blood of man containing gametocytes sucks them up with the meal of blood. Evolution of the parasite, which had become stationary, is again under way. The first changes noted take place in the male—the microgametocyte-chromatin becomes situated around the periphery, the organism assuming a circular shape. Long hyaline filaments are soon seen to protrude, numbering from one or two to five or six, depending on the species of plasmodia. A large amount of chromatin will be noticed in the stained specimen, situated throughout the entire length of the filament. They are actively motile, lash about, finally becoming free from the parent body, which undergoes degeneration. These released filaments are the fully developed microgametes, which seek, penetrate and fertilize the female forms. Following fertilization an organism known as a

zygote develops; it does not encyst but develops into an elongated form, an ookinete. This is an actively motile organism which penetrates the epithelial lining of the mosquito's stomach, lodging itself in the muscular wall of this organ. Evolution proceeds and the oocyst is here formed. In this body are formed the sporozoites which find their way to and become lodged in the salivary glands of the insect, become free in their saliva and are injected into man in the biting process. It should be noted at this point that a complete description of the evolution of the parasite in man and the mosquito is not intended in the foregoing; it simply being the aim to emphasize and illustrate the more important changes occurring as evolution proceeds.

With a clear understanding of the etiology, let us now, in a general way, consider the prophylaxis. It is quite generally known and a fact almost universally accepted that the mosquito gives malaria to man. It is not as generally known or as universally accepted that man gives malaria to the mosquito. Acting upon the more thoroughly accepted doctrine, much attention has been given toward preventing mosquitoes from giving malaria to man, while at least the general practitioner has entirely overlooked the significant fact that without man first giving the infection to the mosquito this insect is absolutely unable to transmit it. I do not wish to be misunderstood as to my attitude on the advisability of continuing the fight against the mosquito wherever practical, but in many localities such a campaign is impractical; they cannot nor ever will be effaced from certain communities, while there is no community that cannot within a few months become free from gamete carriers, just so soon as the fundamental principles involved in the cycle of the plasmodia are thoroughly understood and appreciated by all medical men. Add to this propaganda the hearty co-operation of the laiety and the eradication of malaria can be completed within a nation, state, county or village, or in other words, it becomes a local issue. I shall not take up in detail a discussion of the many units that must enter into a campaign against malaria. The importance of the destruction of mosquitoes and their breeding places, the screening of the home and public meeting place should not be passed by lightly, but so much has already been written in regard to these prophylactic units that they are all perfectly familiar to you. They concern the sanitarian more especially than the physician, while, to my mind, the most important prophylactic unit and one that has been sadly neglected concerns directly the practicing physician. I refer to the early diagnosis and proper treatment of all malarial infections.

The diagnosis of malaria may be considered under the heads of clinical and laboratory methods. I wish, in passing, to mention the so-called therapeutic test, only to condemn it. This test consists of giving quinine to suspected cases of malaria; those that respond to the medication are classified as malarial, while those that do not have to be content with some other line of expectant treatment. Inasmuch as malarial fever is not the only febrile manifestation that will respond to the action of the quinine salts and certain other febrile manifestations are self-limited, the fallacy of depending upon this test is self-evident.

A clinical diagnosis of malaria is seldom or ever satisfactory. We have, however, at times to depend upon it, but this should not deter us from making every effort to make, or obtain, a laboratory diagnosis. When we take into consideration the fact that there are so many disease processes the symptoms of which so closely simulate malaria, when we again consider that even in finding the parasites in the blood of our patients we may not have a complete key to the diagnosis, it is surely very evident what an imposition we practice on our patients when we do not avail ourselves of every opportunity to find out their real condition in suspected cases of malarial fever.

It is quite generally held that a laboratory

diagnosis of malaria requires such time as to preclude the busy physician from attempting it. This is not correct, for with the adoption of a proper technique 90 per cent of all malarial cases can be diagnosticated in little more time than is required for an urinalysis. Certain teachings are responsible for a bad technique and result in so many failures than attempts to arrive at diagnoses by laboratory methods are given up in digust. For instance, in picking up a recent edition of a text-book on general medicine, I read the following directions for the examination of suspected malarial blood: "A drop of blood is taken from the finger or lobe of the ear during the chill, or an hour or two previously, while the temperature is rising." I protest against such teaching and would caution a man desirous of making laboratory diagnoses to time the taking of his blood smears, depending upon the type of infection he is most likely dealing with, so that smears are taken when the parasites are most numerous in the peripheral circulation. Sporulation of the aestivo-autumnal parasites takes place almost entirely in the deep tissues, the young merozoites appearing in the peripheral circulation from two to three hours later and gradually disappear again within a few hours to complete their evolution in the deep tissues where sporulation again takes place. It will therefore be readily seen that if the advice I have quoted is followed and smears taken just before, or during, a chill, that this is the very time when there is the least likelihood of finding parasites in the peripheral circulation. Do not understand me and interpret my meaning that there will be no parasites, but at this particular time an hour or more spent in searching for parasites might be unsuccessful, while by proper timing the taking of the smear a very few minutes would suffice to demonstrate the plasmodia. In regard to the benign tertian infections, sporulation takes place principally in the deep tissues, but the young merozoites appear sooner and remain longer in the peripheral circulation than in the aestivo-autumnal fevers, so that the most likely hours for their detection are spread over a longer period. In the quartan type—seldom encountered in the southern states—sporulation is about equally divided between the peripheral circulation and the deep tissues, so there is not the same necessity for timing the taking of blood smears in these infections. A good general rule to adopt is to take smears between three and five hours after sporulation, which is characterized by the chill, or, in the absence of a chill, exacerbation of clinical symptoms. I have heard it said that it is not practical to wait for a laboratory diagnosis before instituting treatment. To this I would reply that in those extremely grave cases necessitating prompt treatment in nearly all instances a few minutes spent with the microscope will confirm a suspected malarial infection. I would urge the making of smears; if necessary, institute treatment, and at your leisure confirm the diagnosis with the microscope. In the very large majority of cases, however, a delay of one or two days, giving during this time non-specific symptomatic treatment, will do the patient less harm than the too universal habit of making a diagnosis of malaria in all cases of chills and fever. Tuberculosis, appendicitis, endocarditis, septic cholecystitis, pyelitis and many other conditions may closely simulate a malarial infection, so that it is very necessary that the proper treatment of these conditions be not delayed by calling them malaria and drenching them with quinine.

With the diagnosis established there is probably no disease which we can treat with more certainty of success than malaria. In quinine we have a true specific, one of very few we possess—in fact there is no drug so truly specific in the treatment of a disease as this drug in the malarial infections. Craig[4] in extensive studies on the action of quinine on the plasmodia has demonstrated that all forms of the parasite in all stages of its development in man, except possibly the presporulating

forms, are acted upon by the quinine salts. One has to read this author's very elaborate findings to thoroughly appreciate the true and full value of this drug in malaria. As previously referred to, Darling has conducted a series of experiments demonstrating that the gametes can, by persistent treatment with quinine, be entirely eradicated from the circulation of man.

It is not within the scope of this article to discuss the treatment of malaria, but it has been thus briefly referred to, for "The value of, and necessity for, an early diagnosis in all malarial infections" lies in the fact that with treatment promptly instituted one of the most important prophylactic units in a campaign against malaria has been taken advantage of.

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## A PRELIMINARY DISCUSSION OF PITUITARY DISTURBANCE AS RELATED TO SOME CASES OF EPILEPSY, PSYCHOSES, PERSONALITY AND OTHER OBSCURE PROBLEMS.

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The pituitary body consists of an anterior lobe, a posterior lobe and an intermediate part which connects the posterior lobe to the infundibulum. At present, the two last-named divisions may be considered together. The pituitary body lies in a fold of the dura and has neither pia nor arachnoid covering. The anterior lobe is derived from the epithelium of the oral cavity, while the posterior lobe is derived from the interbrain. According to Frazier[1] the anterior lobe is glandular, and gives an internal secretion, regulating, to a great extent, the form of the body and growth of the bones, and the posterior lobe probably has to do with the vessel innervation and blood pressure.

The gland is found in all animals having a cranium and the removal of the pituitary is incompatible with life. It is probably related in its secretion to other ductless glands. The pituitary body is about the best protected organ in the body. Livon and Peron[2] found that partial removal of the anterior lobe in a dog has caused, among other things, epileptic seizures. The posterior lobe, according to Cushing[3], has blood pressure increasing qualities, contains a powerful galactagogue and has to do with carbohydrate metabolism and adiposity.

Because pathological hyperpituitarism may progress to destruction and hypopituitarism be induced and symptoms of anterior lobe and posterior lobe disturbance may also be blended, Cushing suggests dyspituitarism as a name for this disordered pituitary activity. Disturbance of the pituitary has to do with growth of bone, fat and hair, with increased sugar tolerance, abnormal sexual development, especially infantilism, low blood pressure, slow pulse, psychic states and probably many other things.

IN RELATION TO EPILEPSY.

Uncinate seizures occurred in Cushing's cases of dyspituitarism rather often while gen-

(1) Frazier, Prog. Med., Vol. XV., No. 17.
(2) Bull, Acad. de Med., 1912., Vol. XVII, No. 324.
(3) Cushing, The Pituitary Body and Its Disorders.

eral epileptiform seizures are reported with almost equal frequency. He also states six reasons why hypophyseal insufficiency may be related to epilepsy. In brief they are:

1. Sir Victor Horsley noted motor cortex hyperexcitability in canines after hypophysectomies.

2. Cushing observed a tendency to epileptiform convulsions in animals kept for long periods after partial hypophysectomy.

3. Epilepsy is a frequent accompaniment of clinical conditions in which an insufficiency of the gland is manifest.

4. The pituitary body is prone to be damaged from bursting fracture of the base of the skull.

5. It is believed the posterior lobe secretion enters the cerebrospinal fluid and thus bathes the cortex with a substance which is essential to cortical cell functional stability.

6. Many individuals, supposed to be suffering from so-called genuine epilepsy, present symptoms of hypophyseal deficiency, and in some of these hypophyseal extract has served to moderate the seizures.

Clark and Caldwell[4] think that the circulatory disorders in some cases of epilepsy shown frequently in slow pulse, vaso-motor stasis in the extremities and an invariably low blood pressure when arterio-sclerosis is not advanced, the tendency to obesity and a ravenous appetite, suggest a disturbance of the pituitary body. Dr. Johnston, of Pittsburgh, they say, was the first to show that irregular bony formation of the sella turcica might have some bearing on epilepsy.

In view of all these facts, the writer some months ago began to study his epileptic cases for a possible connection with pituitary disturbance. Only a limited number of cases have been investigated. Only those cases were selected which showed one or more conditions supposed to be due to changed pituitary secretion, as increase in bone length or width, adiposity, sexual infantilism, change in sugar tolerance, low blood pressure, voracious appetite or underdevelopment of hair.

It was thought that a possible diagnosis might be made that pituitary trouble was causing the attacks in epileptics, when beside showing clinical signs of hypopituitarism, the case gave radiographic evidence of a changed sella turcica. The sella turcica in these cases have all been radiographed by Dr. Daniel D. Talley, who made stereographic plates, as the outline of the sella shows much better when taken in this manner.

It must be remembered that these studies are in their initial stage, the cases *not yet completely examined*, and that only a few months have elapsed since any of them have been put on treatment. Our methods of examination and ideas of the relation of pituitary disturbance to epilepsy are still in the crystalizing stage. The writer's observations tend to show the relation of certain cases of epilepsy to hypopituitarism as pointed out by Cushing, while the radiographs of Dr. Talley in connection with these cases seem to support the suggestion of Johnston as regards sella turcica changes. Cases were radiographed which showed no sella turcica changes, but one fact may be emphasized, that every case which showed marked sella turcica change gave definite symptoms of hypopituitarism, and vice versa. Five of these cases are briefly reported as follows:

Case 1.—M. T., age 14 years, male. He began to have convulsions when 13 years of age, which were general and occurred about once a month. He also had infrequent petit mal attacks. His family history was clear. He was bright mentally, was rather seclusive, nervous, and occasionally wet the bed. His blood pressure was 103. His appetite was voracious. The radiographic report of fossa showed that the sella turcica was large and shallow with irregular outlines. The patient was recently put on pituitary extract, and has had no attacks for seven months.

Case 2.—R. J., age 14½ years, male. He began to have attacks when 14. Attacks occurred about one every six weeks and were general in char-

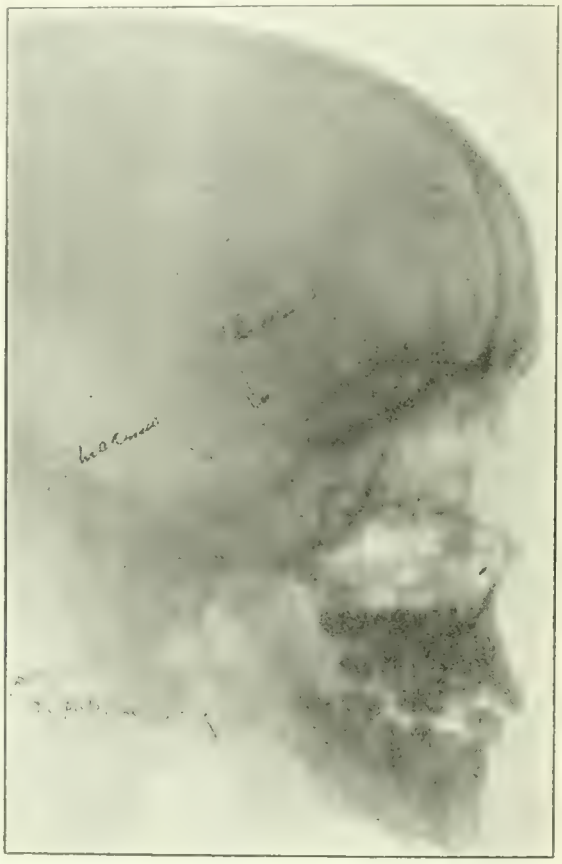
(4) Clark & Caldwell, Jour. Amer. Med. Ass'n., Vol. LXII, No. 1, page 63.

acter. The patient's father had alcoholism and convulsions. His sexual development was normal, perspiration was decreased, and blood pressure was 95. The patient did well at school. His hair was thin both on the head and body, and the head was rather large. His appetite was voracious. He had spells of laughing and talking [illegible]. When seven years of age he had a severe fall and struck the back of his head. The radiographic report showed no sign of fracture, [illegible]

No. 1—This radiograph shows a normal sella turcica at the age of puberty for comparison.

were thickened, and the posterior outline of the fossa was irregular. The patient was put on pituitary extract and bromide and is improving.

Case 3.—M. Z., age 28 years, female. She began to have convulsions when 12 years of age, which occurred from two to three a week and were general in character. The patient also had petit mal attacks. Her family history was clear, except that most of the members on both sides were nervous. The patient's menstruation was exceedingly scant, her appetite was voracious, and perspiration was decreased. Her features were heavy, and she was emotional and had vomiting spells. Her weight at present is 140 pounds, and her blood pressure 130. At 10 years of age she fell from a horse and struck her head but was not unconscious. The radiographic report showed no fracture of the skull, but the pituitary fossa was small and the anterior clinoid processes rather thick. The posterior clinoid processes [illegible]

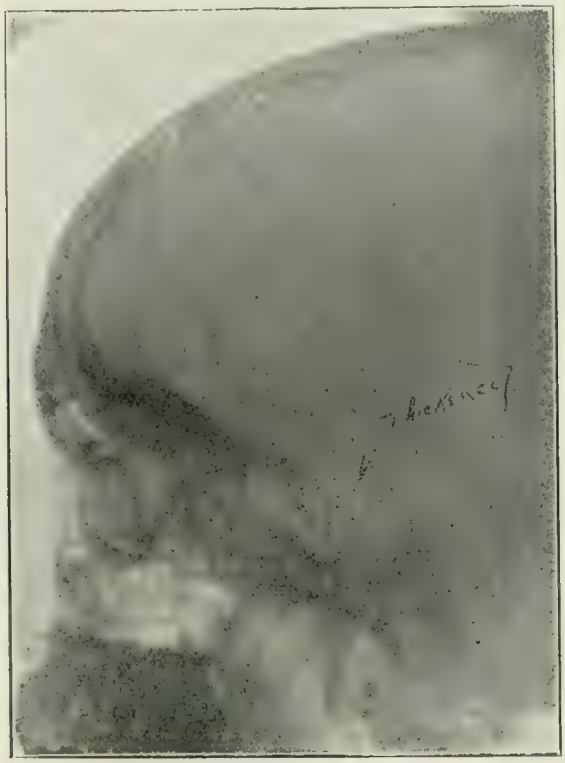


No. 2—This radiograph shows the sella turcica in an epileptic with evidences of hypopituitarism at the age of puberty. Note the small fossa and the thickened anterior and posterior clinoid processes.

the fossa. She was put upon pituitary extract and has had but two attacks in six months.

Case 4.—E. G., age 11½ years, female. She began to have convulsions six months before she came under observation. They were general in character, although she drew to the left, and occurred about once a month. The family history

was clear. Her perspiration was normal. Menstruation had not yet appeared. The patient was irritable and impetuous. She was quite fat, and her second and third toes on each foot were joined. Her appetite was voracious. When four years old she fell eleven feet, struck her head and was unconscious for hours. The radiographic report showed no fracture of the skull. The frontal and sphenoidal sinuses were small. The pituitary fossa was about the normal size, but both the anterior and posterior clinoid processes were abnormally massive. The child was put upon

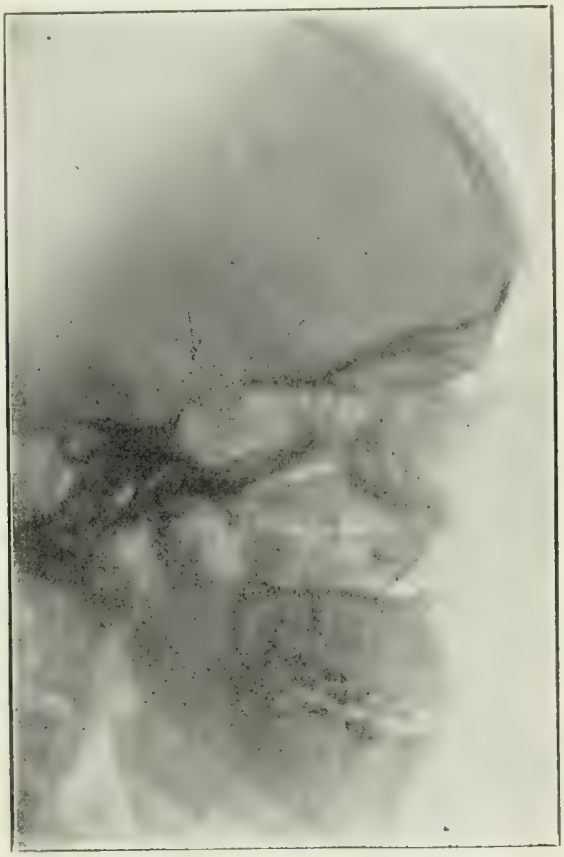


No. 3—This radiograph shows the sella turcica in a case of psychosis resembling dementia praecox in a boy at the time of puberty, who had no epileptic attacks but who showed long bones and infantilism. Case H. C. in the text. Note the thickened posterior clinoid processes.

pituitary extract and had no attacks for five months, then one mild attack, and none for the last two months.

Case 5.—E. B., age 17 years, male. Convulsions began a few months before the patient came under observation. They were general in character and occurred from two to four a week. The family history was clear, except that one aunt had epilepsy. His sexual development was normal, his features were heavy and he had a high arched palate. His blood pressure was 110. The radiographic report showed the sella turcica about normal size, but both the anterior and posterior clinoid processes were thickened and joined together. The patient was put upon bromide and markedly improved, and then on pituitary extract, and has had no attacks the five months since.

It is noteworthy that the attacks in these five cases all began near the time of puberty.



No. 4—This radiograph shows the sella turcica in a case of epilepsy beginning at the time of puberty. This girl showed marked adiposity and was much improved by the administration of pituitary extract. Note the small sella turcica and the enlargement of the anterior and posterior clinoid processes.

In no case was there noticeable evidence of thyroid trouble.

Before passing on, let it be distinctly understood that only a small class of epileptics seem to show pituitary disturbance and that sella turcica radiography of promiscuous and un-

selected cases of epilepsy will prove disappointing. The situation is comparable to that of birth trauma epilepsy, elsewhere discussed by the writer in which a few selected cases may be treated surgically with brilliant results.[5] These two classes of cases, together with quite a number of epileptics, even children, who show a positive Wassermann reaction, rob epilepsy of much of its previous formidableness.

IN RELATION TO CERTAIN PSYCHOSES.

Cushing[6] observed psychic states due solely to the effect, on the one hand, of an excess or perversion of pituitary secretion, or on the other, of an insufficiency of secretion. Psychic symptoms due to pressure on neighboring brain structures we will omit from this discussion. He noted that with *hypersecretion* temperamental changes with wakefulness, lack of concentration, indecisiveness, irritability and distrust occurred. When it dated from early life there was usually educational deficiency; thus giants are as a rule of low intellect. Exaggerated libido may appear in early life. In females, hypersecretion usually gives amenorrhoea, but not solely due to pituitary disturbance, and amenorrhoea is also seen in hypopituitarism. With *hypopituitarism* he found disturbances ranging from mild psychoses to extreme mental derangement with epilepsy, anaphrodisia or impotence after puberty, inability to concentrate, impairment of memory, sometimes drowsiness and adiposis dolorosa. Before puberty hypopituitarism shows lack of hair, feminine type and small organs in the male, and fat increase as a rule, low temperature and low pulse in both sexes. With evidences of this disturbance present, either the male or female may reproduce.

The writer has observed a type of psychosis probably due to hypopituitarism at puberty in two very similar cases. Both of these cases showed distinct decrease in the size of the sella turcica due to erosion and enlargement of the clinoid processes. Both cases showed a probable preceding hyperpituitarism, and in neither case were there signs of neighborhood symptoms. Both of these cases were of normal or slightly above normal intelligence in early life, both were sexually underdeveloped, thin and rather tall. Both showed inability to concentrate, irritability and marked repetition of movements, and both improved upon the administration of two grains of the whole gland of pituitary extract three times a day.

Case 1.—H. C., male, age 14 years when first seen and age 17 at present. His family history was negative. At the age of 13 he began to be irritable and rather unsociable. He had been bright at school until thirteen years of age, when he became inattentive and developed periods of sitting still and also periods of all kinds of automatic movements. He would put his stocking on and take it off over and over. He would jump up and whirl around. He would cross and uncross his legs many times. He would start down the steps to school, go back up and then down again as many as ten or twelve times before he could finally leave the house. He could not write a letter. He would sit at the table and not eat until repeatedly told to eat. Upon examination it was found that he was long-boned, thin and his genitals, at seventeen years, when the diagnosis of hypopituitarism was made, were no larger than those of a boy five or six years of age, and there was no hair on the pubes. He was treated with bromides and chlorotone with little or no improvement, then he was put on pituitary gland extract, gr. 2, t. i. d., and in a few months he became entirely normal. The radiographic report showed a somewhat large sella turcica with anterior and posterior clinoid processes heavier than usual.

Case 2.—C. H., female, age 16½ years when first seen and 16 when symptoms were first noticed. Her family history was negative except that her grandmother was insane. The patient began to complain of itching from fright and of her hands and arms getting numb and of feeling "dreamy." She repeated movements and would put on the same garment over and over. She would stop in walking forward and then walk backward. She became irritable. She would strike her head against the chair over and over in saying her prayers. She occasionally wet the bed. She was so slow in dressing, eating and writing that she

(5) Tucker, Va. Med. Semi-Monthly, Dec. 26, 1913.

(6) Cushing, The Pituitary Body and Its Disorders. Page 271.

had to be assisted. She took three days with various trials to write a postal card to her mother. She had amenorrhoea for five months at a time. She was bright at school until the present trouble and was never peculiar during earlier childhood. Her blood pressure was 120. She was tall, thin and her breasts were very poorly developed for her age. The growth of hair under the arms and on pubes was slight. Her skin was dry. She had a hand tremor and pulse from 90 to 100. She was given massage and at the same time bromides and two grains of pituitary extract, three times a day. She is still under treatment, but has greatly improved, and now she can eat by herself. She does not walk backward or strike her head. She can write a postal in an hour and is hardly noticeably peculiar. Her menses have returned. The radiographic report showed the sella turcica normal in size, but the posterior clinoid processes markedly thickened, especially on the surface next to the pituitary.

Two cases of hyperpituitarism are being studied. In both the mind is unusually bright and has good power of concentration, but both are high strung and nervous and exhaust easily. They are both briefly reported as follows:

Case 1.—N. W., female, 8 years of age when she came under observation. Her grandmother was confined to an insane asylum before her death, and was noted to have had very large features and very large hands and feet. Her mother was a patient of the writer's with marked acromegaly, upon whom Dr. Cushing operated and removed a tumor of the pituitary. The mother was very much depressed at the time of the operation, and committed suicide three weeks afterward by jumping from the window. The child was 57 inches tall, thin and exceptionally bright at school. However, from 1½ to 5 years of age the child was very fat. She was nervous, restless and sometimes irritable. At the age of two years she began to menstruate, and has menstruated regularly up to the present time, except for two months, once when she had measles and once during some other child's disease. She had a marked growth of hair on the pubes when six years of age, and when seen at eight years of age her breasts were about the size of those of a girl 18 years old. This child had no psychosis but simply general nervousness. Unfortunately, there is no radiograph of this case.

Case 2.—H. H., female, age 26 years. Her family history was negative, except that her father's family were stout, hairy people who developed early. This patient was bald when a baby until nine months old. At two years of age she had a period of several weeks in which she had hallucinations of sight and convulsions. These were supposed to be due to an attack of grip, and she has had no convulsions since. At nine years of age her breasts were noticed to be much more developed than other girls of her age. Her menses began at eleven, and at fifteen there was so much hair on her arms that she was ashamed to wear short sleeves. Her mother procured some preparation and removed the hair. About this time she became very fat and weighed about 154 pounds. She was exceptionally bright at school, and showed marked powers of concentration. In the last few months she has wondered whether she cared for her mother or not, what people would look like if they dropped dead; has become very nervous; at times is much depressed, and at others very unusually gay. She is the average height. Her perspiration is very profuse, and the legs of her stockings often become so wet that she has to change to dry stockings. The lower jaw is quite prominent. Her weight at present is 132 pounds. The radiograph showed a somewhat large sella turcica but no other abnormalities.

Both of these cases gave unmistakable evidence of hyperpituitarism and in the first case it is of extreme interest to note marked pituitary disturbance in three generations of the family. It is also noteworthy that both of these patients became very fat for several years and afterward lost flesh. It is an interesting question whether these patients could have had a period of hyposecretion to correspond with the period of adiposity.

### PERSONALITY AND OTHER PROBLEMS.

Frank tumors of the pituitary, producing conditions of acromegaly, have not been dealt with in this paper and the position which dwarfism takes in pituitary disturbance is as yet unsettled. If, however, shading down from gross lesions causing acromegaly and giantism, through certain epileptic states, through infantilism with adiposity, through over-sexual development and marked increase in body hair, through psychic states and nervousness and through dyspituitarism associated with other ductless gland disturbance, pituitary diseases may cause these pathological condi-

tions, can we believe that its manifestations stop here? Within the normal limit of what we know as personality may not the effect of pituitary secretion, greater or less in amount than average, or changed in character, have a definite effect upon personality?

The fat man is notoriously good natured. Is this because he is fat or because he has a mild under-secretion of the pituitary which may cause both? There is a type of thin, long-boned men who have irritable dispositions. Is this because, as has been assigned, "their nerves are near the surface," or because of a mild hyperpituitarism? Would a Falstaff have the same sort of pituitary secretion in quantity and quality as a lean and hungry Cassius?

May it not be possible that some man may be a rake partly because he cannot control his pituitary secretion rather than solely because he does not use his volition over his libido? Possibly some woman may have fallen, not so much because she was "rashly importunate" as from the fact that at puberty her pituitary secretion was more than, or chemically different from, her more fortunate sisters. On the other hand, can the less active pituitary have anything to do with some of the much-satisfied virtuous? May not an individual reform sometimes be connected with the passage from a stage of hyper to hypopituitarism?

Can the pituitary secretion have to do with making a petit or a tall, slender young woman more attractive than a coarse-featured, large-boned or over fat woman, as well as have to do with the difference in their personal appearance?

We have several good authorities who have found in a type of rather fat man, with but little hair on his body, large hips, wide pelvis, small genitals and effeminate mannerisms, definite changes in the pituitary. On the other hand, may not the pituitary have something to do with the masculine type of woman? Opposed to the fat, effeminate, smooth-skinned man is the big, rough, hairy, independent individual. Could his pituitary secretion have had anything to do with Esau's selling his birthright, as it may have had with his overgrowth of hair?

These questions, while more or less conjectural, are not jocular, and time may prove the inferences of some and reject others. They are mentioned only to elicit interest in this field of research which *with other ductless gland disturbance* may have a bearing upon them and also upon the more obscure problems of some cases of criminology, of feeble-mindedness, of sexual perversion, of hermaphroditism, or possibly even upon that most obscure problem of them all, sex selection.

208 E. Franklin Street.

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## USE OF PITUITARY EXTRACT IN OBSTETRICS.*

By F. W. Wilkerson, M.D.,
Montgomery, Ala.

The recent successful introduction of extract of the pituitary body into the armamentarium of the obstetrician is my excuse for this paper. I trust it will arouse sufficient discussion to enable us to put the proper valuation on this drug and to come to some definite conclusions regarding indications and contra-indications for its use. The conclusions I have formed are based on a series of twenty cases occurring in a general practice. A small number to be sure, but so uniformly successful has been the employment of the drug in these cases and so practical is the subject that I feel justified in discussing it before this association.

As you know, the pituitary gland consists of two lobes, an anterior and a posterior, but it is only the posterior lobe that concerns us

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in this paper. Extracts of this lobe raise blood pressure, slow the heart, promote diuresis and excite uterine contractions. It has been termed a "utero-vasculo-heart tonic." The effects on the circulation are somewhat like those of adrenalin, being more lasting but not quite so intense.

It is as an oxytocic, however, that the drug has achieved its greatest success and there can be no further doubt that it is the most valuable agent for this purpose that we now possess. It produces strong to and fro contractions of the upper uterine segment, simulating exactly those produced in a normal case without artificial aid. According to Edgar, the contractions, while intermittent, occur so close together that practically they must be regarded as being continuous.

The drug is administered intramuscularly, usually in the muscles of the arm. Contractions begin in from five to fifteen minutes after injection and continue from thirty to forty-five minutes. In one of my cases the pains began almost as soon as the needle was withdrawn from the arm. I heard recently of a physician in another city who made the mistake of leaving the patient's house after giving a dose of pituitary extract. He was away only a few minutes, but on his return found the family very much frightened and the baby lying in bed awaiting him. Never give a dose of this drug unless you are prepared to remain right with your patient. According to Edgar, it should never be given unless anaesthesia is at hand for immediate delivery if necessary, to prevent rupture of the uterus.

As a rule, it is useless to give more than two doses, for if the desired result is not produced by the second dose, it will very likely be necessary to resort to the use of forceps. At least forty-five minutes should elapse between doses. In my cases delivery has occurred in from fifteen to forty-five minutes, but in one instance one and one-half hours elapsed before the child was born.

The drug is marketed in ampoules containing from one to two cc., which are put up in small packages very easy to carry in the physician's bag. There are several different preparations on the market, but I do not think they differ much in efficiency.

Pituitary extract is of value in uterine inertia, primary or secondary, in postpartum hemorrhage and in Cesaerean section (Edgar), where it may take the place of ergot. Its greatest value is in the uterine inertia occurring in the second stage of labor in multiparae, and here, in many instances, its action is little short of wonderful. Through its agency many of these cases that would linger for hours and then possibly necessitate the use of forceps are terminated in a very few minutes with no harm to mother or child and no more effort on the physician's part than the giving of a hypodermic. The result is a lessening of the suffering and mental and physical fatigue of the mother and a great saving of time for the doctor, a result surely worthy of being achieved.

Pituitary extract should never be given unless the cervix is at least three fingers dilated, because if given sooner the severe contractions produced may cause pressure on the fetus, rupture of the uterus or severe laceration of the cervix from the too rapid dilation. Its action is much more effective during the second than during the first stage, and for the reasons just given it should not be used in the first stage. However, in the first stage or in the presence of obstruction, some authorities use small tentative doses, not for the purpose of complete delivery, but to bring the head sufficiently low for a simple forceps operation.

The drug has a much larger field of usefulness in multiparae than in primiparae. In primiparae there is usually more obstruction and the tight perineum is too easily torn to allow a rapid delivery, such as follows the administration of pituitary extract. Only three of my series were primiparae. According to Lindeman, almost all low forceps cases can be relieved by pituitary extract and many high

and medium forceps can be converted into low forceps, making the operation a much simpler and safer one.

Apparently pituitary extract has no toxic effect on either mother or child, but the following case is of interest and the symptoms developed may possibly have been due to the injection that was given.

Primipara, 18 years old: Uneventful pregnancy, except very severe nausea during first three months. Labor began, with slight pains, about midnight. These continued with very little cervical dilatation until 10 a.m., when they grew harder and the cervix began to dilate. Membranes ruptured about 11 a.m. and head gradually descended until it was fairly well down on perineum by noon. At this time the pains almost ceased, and patient seemed to be making no progress, so I gave her an injection of pituitary extract. Within the course of a few minutes pains became very hard and head descended so low that I thought each pain would force it through. Remained this way in spite of hard pains for one and one-half hours, perineum being very tight, when, just as I had determined to use forceps, the head came through and child was delivered. Weight seven and one-half pounds and was in good condition. Condition continued good for thirty-six hours, when his arms began to twitch. Every few minutes there would be a clonic spasm of both arms, and this soon spread over the whole body. Careful examination failed to reveal any evidence of a fractured skull, or of anything that might increase the intracranial tension. The gastro-intestinal tract was thoroughly cleansed with castor oil, but still the convulsions continued—clonic convulsions of the whole body—arms, legs and back would suddenly become so rigid that it seemed as if the baby would jump from the nurse's lap. This continued for forty-eight hours, and baby grew so weak that I thought surely he would die. I tried to stimulate him with brandy and to keep the spasms down with bromides. After forty-eight hours, when I had abandoned all hope for the infant the spasms gradually grew less frequent and less severe and finally ceased. The baby recovered entirely and today is a healthy youngster of six months. In the absence of any discernible signs of cerebral compression or of gastro-intestinal irritation, it seems possible that the symptoms in this case may have been due to passage of the pituitary substance through the placental circulation into that of the infant. A much longer time than usual, one and one-half hours, elapsed between the injection of pituitary and birth of the infant, so that the fetal circulation could have absorbed more of the drug than in the average case. However, this is but speculation, as I have not seen reports of similar cases.

Some authorities report excellent results from its use in postpartum hemorrhage, but I have had no experience with this phase of its action.

Pituitary extract is not indicated and should not be used in a case that steadily progresses with good hard pains. In such a case as this it is not necessary for us to have artificial aid, and I do not think it is right to use the drug without definite indication. Its routine use in all cases seems to me to be a mistake. In a uterus that is much stretched and thinned out from a twin pregnancy, polyhydramnios, hydrocephalus or one that is atonic from any cause, pituitary extract should not be used because violent contraction of such a uterus may cause it to rupture. Likewise in a malposition such as a transverse presentation, in case of impassable obstruction, or where the child is too large for the canal, the drug is definitely contra-indicated. In the production of abortion, it is of no avail, as it apparently has no effect on uterine contractions at all. It is ineffective in premature labor, not stimulating contractions as it does in full term. In primiparae it will not have so large a field of usefulness as it has in multiparae, contractions not being so effective, presumably because of the greater resistance offered to the fetus by the rigid canal.

In conclusion, I think it can be safely said that pituitary extract is the most efficient oxytocic now at our command, and that its especial application is in cases of uterine inertia in the second stage of labor. When properly used in these cases the drug will hasten the progress of labor in a normal way, will often obviate the use of forceps, and by the rapidity of its action will relieve the mother of hours of physical suffering and anxiety.

# DIAGNOSIS OF CERTAIN "STOMACH CASES."*

By Alexander G. Brown, Jr., M.D.,
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Eructation, pyrosis, colic, nausea, vomiting, anorexia, parorexia, gastralgia, and hyperorexia (exaggerated hunger) are prominent symptoms of stomach disturbance and form various gastric syndromes. In connection with these symptoms mere functional derangement of the stomach may exist. On the other hand, the stomach may display a group of these symptoms, presenting various gastric syndromes with actual and real anatomical changes in itself. In fact, in the course of a larger variety of disturbances inside and outside of the stomach gastric symptoms may assume various dominant and paramount places of importance in the clinical picture. These stomach syndromes, then, may "star" in many clinical dramas, if not tragedies. In many clinical entities the stomach stands out as the chief offender, both in the eyes of patient and physician.

"Stomach cases," so-called require careful study. Every case of "heartburn" is not one of gastritis. Every pain in the stomach is not due to an ulcer, every vomiting attack is not an evidence of gastritis, ulcer or cancer. These symptoms, while arising from the stomach and expressed by the stomach, should be carefully interpreted. The intimate and complicated connection between the stomach and other organs and conditions of the body quickly explain the reason for its vicarious action. Its organic and physiologic structure being that of muscular pouch for the reception of food, lying just within the vestibule of the gastro-intestinal tract, being surrounded by and connected with other digestive organs, being supplied by a large number of blood vessels, being intimately associated with adjacent organs, and being connected by nerves with the remotest parts of the body—all these factors make the stomach in disease a prominent and emphatic agent of expression. This expression of gastric disturbance is largely one of derangement of the gastric functions. Through the nervous mechanism the stomach's functions are disturbed by abnormal stimuli reaching it. The chief factors in this nervous mechanism are the pneumogastric and splanchnic nerves.

Motor action of the stomach results from the stimulation of the pneumogastric and, when over stimulated, produces violent contraction of stomach, while the splanchnic nerves when over stimulated produce relaxation of motor structures. Secretory action of the stomach is increased by stimulation of the pneumogastric, while it is diminished by action of the splanchnics. The sensory fibres pass through the vagus also. Vomiting action of the stomach is presided over by a center in the medulla and performed by stimulation of the pneumogastric acting on the stomach and aesophagus, the phrenic acting on the diaphragm and the intercostal nerve acting on abdominal muscles. This varied nerve connection may serve to derange the motor, secretory and sensory action of the stomach. These stimuli may come from mental impressions, cerebral or meningeal diseases; from pathological states in the eye, nose, mouth, pharynx, larynx, thyroid gland, bronchi or lung, liver, gall-bladder, spleen, pancreas, kidney, bladder, prostate; also from certain blood conditions and from intestines and stomach itself.

I. Certain non-bacterial toxic disturbances or states may produce gastric syndromes, such as:
Addison's disease.
Diabetes (acidosis).
Gout.
Paroxysmal heamoglobinuria.
Nephritis (uremia).
Also certain bacterial intoxications may show gastric symptoms, such acute infections as: Scarlet fever, measles, variola, acute pneumonia, yellow fever, malaria, typhoid fever, acute tubercu-

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losis, ulcerative endocarditis, acute yellow atrophy of liver, anterior poliomyelitis.

II. Reflex gastric syndromes may appear from irritation in the cerebrum in such conditions as:

a. Cerebral tumor.
b. Abscess (cerebral).
c. Intracranial hemorrhage.
d. Embolism or thrombosis.
e. Anemia of brain.
f. Emotional or hysterical states.
g. Arteriosclerosis and high blood pressure.
h. Neurasthenia.
i. Muscular or refractive errors of the eye.
j. Tubercular meningitis.

Case—Record 10,021, illustrating acute tubercular meningitis. Miss W., age 16, female. Eight weeks prior to examination began with vomiting which was uncontrolable; nothing was retained, no fever, no blood vomited. Gastric and duodenal ulcer at first was suspected. Vomiting was persistent and paroxysmal. When first seen by me with Dr. J. S. Horsley no other symptoms were obtainable, although repeated physical examinations were made, as were laboratory studies of vomitus, blood, urine, feces. There had been suppression of menstruation for eight weeks prior to vomiting, but pregnancy was eliminated as a possible cause. In a short time pupillary reflex was found to be tardy; an examination of spinal fluid was indefinite; no bacterial culture, positive tubercular reaction. Then followed in a few days a long train of symptoms showing hyperaesthesia, paraesthesia and tonic and clonic spasms, unconsciousness, epileptoid seizure and paralysis, death.

III. From pharynx, larynx, lungs and thyroid, also, there may be set up marked gastric symptoms, as is seen frequently in whooping cough, acute tuberculosis, enlarged mediastinal glands, aneurism, exophthalmic goitre.

IV. Stomach itself when disease gives prominent gastric symptoms, particularly in such conditions as acute and chronic gastritis, dilatation, stenosis of pylorus, ulcer and cancer.

Case—Record 10,043. Chronic gastritis. Mr. M. C. B., referred for examination by Dr. F. M. Parker, Enfield, N. C.

Age 40; white; painter; no illness until typhoid fever 18 years ago; since has noticed gas eructations, colic, paroxysmal attacks of pain after eating about every six weeks. These attacks have been getting more severe for past 7 years. Last year had an attack in August which lasted for four weeks. On September 13, 1912, was taken suddenly after eating. This pain was in upper part of abdomen, sometimes radiating about umbilicus. Sometimes eating and drinking has relieved the pain. Has had no jaundice, no pain under right shoulder blade, no vomiting, no shortness of breath, no diarrhea, no pain over appendix region, no headache.

Physical examination of chest gave negative results. Examination of feces was negative for occult blood and intestinal parasites. Examination of urine negative. Examination of stomach contents: Ewald's test meal Free Hcl. 46; Combined Hcl. 12; total 58; no lactic; microscopic negative. Diagnosis, chronic gastritis.

In reply to a request for a report on this case Dr. Parker, on March 12, 1914, answered in this way:

1. Was the diagnosis or opinion confirmed or disproved by subsequent clinical course? Answer: Yes, confirmed.

2. What new symptoms appeared? Answer: None.

3. Did patient recover, improve, grow worse or die? Answer: Greatly improved.

4. Comments: He continues to wash out his stomach and is careful of his diet and says he feels better than in years.

Case—Record 10,024. Hypersecretion, gastroptosis, anaemia. Mrs. E. R. B. Age 38 years, white; two children; youngest 9 years; normal labors without previous or subsequent pelvic troubles of any sort. Father died at 82 of "paralysis;" mother at 59 of "paralysis;" a brother at 50 of "paralysis;" four brothers and four sisters now living in good health.

When fifteen Mrs. B. had "inflammation of the bowels," otherwise has had excellent health until five years ago. At this time Mrs. B. had a "spell of grip," followed by "nervous prostration." After this illness she suffered "stomach attacks," pain in bowels, discharge of mucus from bowels; had no gas in stomach, no sour stomach. These attacks occur every two weeks; had been treated by a number of physicians for it.

Her present complaint is extreme weakness, unable to walk without assistance, loss of strength, emaciation, sense of weight in abdomen, periodic attacks of pain in abdomen.

Examination: Weight 117 1-2 lbs.; pale, distressed expression; mouth, gum and tongue red; teeth in good repair; general relaxation of muscles, particularly the abdominal wall. Heart, lungs, liver and spleen normal. Stomach on inflation percussed a hand's breadth below normal position. No piles, no edema, no enlarged veins, no enlargement of lymphatics or thyroid gland.

Blood examination, 3,600,000 red B. C. per c. m.

m., 15,000 leucocytes per c. m. m. (Polys. 82, lymph. 12, large mono. .6); haemoglobin 72 per cent. Malarial parasites, negative.

Test meal, 190 c. c., odor normal, color normal; fluid 80 per cent clear; precipitate starch; mucus negative; Free Hcl. 14; Combined Hcl. 26, total 40; lactic acid negative; blood negative; microscopic negative.

Urine examination: Distinct trace of albumin; no sugar; no acetone; considerable indican; no urobilinogen; phosphates diminished, no blood; occasional pus corpuscle; occasional hyaline cast.

Feces examination: Abundant mucus; no evidence of intestinal parasites; guaiac negative; no excess of undigested food particles.

Diagnosis: Hypersecretion.

Treatment: Dry diet; abdominal strapping; hypodermic injections of arsenite of iron. Patient was discharged much improved.

Result: One year after treatment Mr. B. reports that his wife is in "perfect health."

V. From the liver and gall-bladder a larger group of stomach cases derive the exciting cause. This is frequently observed in such conditions as hepatic colic, cholecystitis, acute and chronic hepatitis.

Case—Record No. 10,238, illustrating gall-tract-gastric-syndrome.

Mrs. T., age 52, white; no illness in early life. Was taken August, 1910, with nausea, pyrosis, eructation, gastric pain and vomiting. No fever, no jaundice, no diarrhea. Examination of stomach contents after Ewald's test meal showed sour odor, white color; Free Hcl. 40; lactic acid. none; volatile acid and acid salts, 20; combined Hcl. 20; total acidity 80; no occult blood. After illness of ten days symptoms were improved and patient went to Buffalo Lithia Springs. In the late fall another series of "stomach attacks" occurred, characterized by more severe pain in the left hypochondrium. In this attack jaundice was prominent symptom with low fever.

Patient was placed upon strict diet, alkaline drinking water, and ox-gall, and up to last few days has not had another attack. Diagnosis, cholecystitis.

VI. Kidney reflex also serves to produce a large group of stomach cases as is seen in stomach disturbance of uremia or nephritis, renal colic, pyelitis, floating kidney.

Case, Record 10,082, illustrating uremic-gastric syndrome.

Miss B. B. O., age 65. Had very little sickness. Three years ago began suffering from stomach. Had severe attacks of shortness of breath, great constipation, hyperorexia, coated tongue, sour stomach, weakness, insomnia.

Chief complaint, stomach distress, sore and coated tongue, dry mouth.

Passed climacterium, general arteriosclerosis, high blood pressure (180 m.m. systolic). Heart hypertrophied, aortic second sound accentuated. Liver small and cirrhotic. Lungs, as asthmatic breathing, no moisture or consolidation. Stomach contents, hyperacid. Urine moderate in amount, with albumin, granular casts, urobilinogen positive, quantity 6 to 153 daily.

Blood, 4,680,000 reds, 7,300 whites. Vomiting, nausea, asthmatic breathing, suppressed urination with albumin casts, with stertorous and unequal breathing when asleep, are chief symptoms.

The free use of the tartrates, effecting a copious secretion of urine, reaching a daily output of 60 to 90 ounces, has restored this case to more or less normal breathing, and has cleared up her dry-coated tongue and has given her good gastric digestion. She is now in fair condition of health.

VII. Pancreas may produce stomach syndromes in such diseases as acute pancreatitis, cancer of pancreas.

VIII. Uterus, ovaries and tubes afford a large number of stomach cases in such states as: Pregnancy, uterine misplacement, endometritis, ovaritis, salpingitis, and stricture of cervix.

IX. Bladder and prostate gland give stomach symptoms in cystitis and prostatitis, etc.

X. Peritoneum, when infected acutely, shows marked stomach disturbances and also in tuberculosis of the peritoneum the stomach syndromes play prominent part, particularly in early stages.

XI. From the intestines the stomach may get exciting factors of disturbances in such conditions as: Duodenal ulcer, appendicitis, cholera infantum, cholera morbus, acute enteritis, hernia (femoral, umbilical, diaphragmatic), obstruction of bowels and intestinal parasites.

## CASES ILLUSTRATIVE OF INTESTINAL PARASITES AS A FACTOR IN STOMACH DISTURBANCE.

I have been impressed by the importance of studying feces in "stomach cases." No "stomach case" should be operated upon without studying the intestinal discharges. The feces should be examined microscopically because far more frequently than it was commonly supposed infection or parasitic implantation in the duodenum or colon sets up gastric disturbances of a marked kind without concomitant intestinal symptoms. From such a source

the motor, secretory and sensory disturbance of the stomach may originate. In not a few stomach cases recently studied, in which parasites of the intestines were discovered in discharges, such symptoms as the following were observed: Hypermotility, peristalic unrest, spasm of the pylorus, nervous belching, eructation, vomiting, atony, insufficiency of cardia (regurgitation of food), insufficiency of pylorus, hyperaesthesia gastralgia, anorexia, akoria (absence of sense of satiety), hyperorexia, parorexia, hyperchlorhydria, hypersecretion and hypochlorhydria.

Case—Record No. 10,164. Male, 55 years; sea captain, referred by Dr. Garland M. Vaden. Chief complaint, pain after eating, choking, eructation, nausea, vomiting.

Past history negative. Present illness began 18 months ago. Loss weight: (from 160 to 130 lbs.). Craving appetite, sour stomach, distention of abdomen, no diarrhea. Has dizziness, palpitation of heart, pain over heart when full of gas. Very nervous and suffers from insomnia; no cough or urinary disturbance. Heart, lungs, blood pressure, liver, spleen, genetalia, lungs and nervous system normal. Urine negative.

Blood, 4,080,000 reds, 3,600 whites; haemoglobin 90, polys. 46, color index 1.12, lympho. 42. No malaria. Large mononuclear 4, polynuclear eosinophiles 6 per cent; mass cells 2.

Stomach contents: hyperchlorhydria.

Feces: Embryo eggs of hookworm abundant.

Treatment: Thymol and Epsom salts.

Case—Record No. 10,026. White, 29 years. Lumberman. Loss weight. Chief complaint, nervous dyspepsia. Nausea, violent contraction and cramp in the stomach on taking food. Anorexia, pyrosis, eructation of food. No intestinal disturbance.

Complete examination of stomach contents showed excess of hydrochloric acid.

Urine showed no explanation of symptoms.

Blood, 5,260,000 reds, 7,300 whites; haemoglobin 95; polys, 79. No malaria. Lympho. 19.5. Eosinophiles 0.5.

Feces examination showed trichomonas hominis intestinalis in large numbers. This is a parasite, roughly speaking, like an apple seed in shape. It assumes many shapes, its body round and globular. Its most common habitat is in the intestines but have been found in the stomach and in liver abscesses. It thrives best in alkaline medium of intestines, where it frequently sets up a diarrhea and gastric disturbance.

Treatment by thymol and Epsom salts produced good recovery.

Case—Record No. 10,125. Male, 26 years. Merchant. Chief complaint: "dyspepsia."

Nervousness, flatulency, colic pain in abdomen, insomnia, weakness, despondency. Eructation, pyrosis, anorexia, no diarrhea.

Complete examination showed in feces, amoeba dysenterioae. Ipecac treatment. Came to good recovery.

## HYPERCHLORHYDRIA.

By Camp Stanley, M.D.,
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In presenting this paper, I do so with some hesitation, as perhaps there are some who would prefer hearing a paper on one of the classics of this field of medicine, namely, peptic ulcer, tumors of the pylorous, or duodenal feeding, and my reason for writing on the subject of hyperchlorhydria is solely to contribute evidence that it is a separate and distinct clinical entity, and not only an aspect of hypersecretion, as a few men doing this work still believe.

Gastric disorders accompanied by hyperchlorhydria form a large percentage of digestive affections, and the convincing array of clinical facts from the reports of such men as Ewald, Boas, Einhorn and others justifies us in looking upon the condition of hyperacidity as entirely independent of hypersecretion.

The line of demarcation is not at all distinct between the neurotic and organic types, thus in the hyperacidity of peptic ulcer or gastritis, chronic it may be the result or the cause. Should it be primary, then it is classified as belonging to those cases so-called "genuine hyperchlorhydria," and under this heading come the two varieties. Hyperacidity as a condition is dependent upon the stimulation of the gastric mucosa by food bringing about

the secretion of gastric juice, which contains an excess of H. C. L. Now this is purely a disturbance of gastric function and in the majority of cases is of nervous origin and belongs to the class of neuroses which are dependant upon the stimulation or inhibition of filaments of the vagus.

Unfortunately little appears in the literature on organic hyperchlorhydria because of the close association of the two varieties and the inability definitely to make the distinction between the two. The symptoms of this condition are not constant, and very frequently I have found a remarkably high acidity in patients who present no symptoms of hyperacidity, but who have come for the relief of some other condition. Usually the symptoms are so insidious in their appearance that it is a year or so before they seek relief, and those cases which have run a long course are most obstinate to handle.

Under the heading of etiology much can be said, but beyond the two most prominent causes, (a) neurotic inheritance, (b) dietetic errors, little else can be said, only that among the many subdivisions of the neurotic form the psychologic ones form the greatest number, while under the heading of dietetic errors I believe that insufficient mastication and the eating of highly seasoned, under-cooked food are the most prominent factors. The use and abuse of alcohol and tobacco, mental overwork, grief, fright, complete this list of the most important causes of this condition.

The basis of this paper and the clinical data, of which I shall write later, have been compiled from a series of eighteen cases which have been under my observation here, and of twenty-one cases in the Augusta Hospital, Berlin, under Prof. Ewald, making a total of thirty-nine cases in which the acidity (free H. C. L.) ranged from 72 to 88, and in which the total acidity ranged from 88 to 110.

Pathologically there are no characteristic changes, and I will say here that our only opportunity for study of the mucosa has been in a few cases, in which the patient has had a soft, spongy mucosa and a small piece of membrane has been accidentally withdrawn with the tube where the aspirating force has been too great, and occasionally in cases of gastric erosions we recover small particles in the $AgNo_3$ washing; the former manner of recovering specimens of mucosa is not a frequent one, and sections obtained in either way have never shown anything characteristic

The symptomatology is quite characteristic. The first subjective symptoms occur at the height of digestion when the acid secretion and especially the H. C. L. greatly exceeds the normal and the symptoms at this time depend, not so much upon the quantity of acid secreted as upon the sensitiveness of the gastric mucosa, as often a very low degree of acidity produces marked painful symptoms which may last for an hour or two, and the subjects can often predict the exact time the pain or distress will appear. The pain varies in duration and severity from mild distress to violent cramping seizures caused by obstruction to the outflow of the acid contents, combined with the violent peristaltic movements of the stomach. Patients are at times able to relieve their symptoms by eating some articles of food, such as olive oil, bread, egg albumen, or even water will sometimes give temporary relief. Those suffering from hyperacidity do not always appear to be very sick, and often appear well nourished. The sensation of a gnawing or burning in the epigastrium, accompanied by headaches and constipation, and acid eructations, are among the more important symptoms.

Perhaps the greatest change that the patient's family notice is that marked difference of disposition which figures more or less conspicuously in all disorders of the stomach.

**The first case that I speak of presents rather unusual symptoms and made her an ulcer suspect. Mrs. M., age 38, married, two children. Early history negative. No specific history. Is extremely nervous and inclined to worry. She had an attack of acute indigestion in May, 1911. Pres-**

ent history: For three weeks she has complained of pain in the epigastrium and vomiting one or two hours after meals. Pains sometime stop for a period of one week. There was slight sensitiveness to pressure over epigastrium, and splashing sound was elicited down to the lower border of the navel.

Physical examination: Heart and lungs were normal; abdomen, well formed, pan, spare, spines and arches prominent, slight sensitiveness over epigastrium; no other points of tenderness; colon distended with gas and liquid feces.

Deglutition sounds normal, thread test negative.

One hour after a test breakfast (Ewald) I found HCL. ++, free HCL. 80. Total acidity 96.

Examination of blood showed Haemo. 68, Leucocytes normal; Poly's normal BP. 110. Examination of urine showed no alb., no casts. Excess of urates. Indican ++. Examination of feces, undigested food, mucus +, no occult blood on a meat free diet. With the above findings, and with three negative thread tests, the diagnosis of hyperacidity was made and treated accordingly. She responded well, and a second test breakfast seven weeks later showed a return to nearly normal of the acid secretions. This is a typical case and forms only two per cent of my group.

Case No. 2—This is quite typical of this condition and forms by far the largest percentage of this group, namely 96 per cent. Mrs. L. H., 40 years old, married, three children. Early history, typhoid when 18 years old, and her digestive disturbances date from this time. "Bilious two or three times a year until she was twenty-four years old. She then experienced no more discomfort until in her thirty-second year, when there was a return of her old trouble, when she complained of pyrosis and slight pain in the epigastrium between meals, acid eructations and constipation. At times these symptoms are greatly aggravated and the pains have been increasing in severity. They appear quite regularly two hours after meals and are only relieved by the taking of food. Physical examination is as follows: Heart and lungs normal, blood examination, Haemo. 70 per cent, Leucocytes 6,800, R. B. C. 4,280,000 B. P. 94 M. M.; urine examination, faint in trace of albumen, Indican ++. No casts Sp. gr. 1018; feces examination, very poor fragmentation, striated muscle fibers, no occult blood (benzidine reaction).

Gastric analysis one hour after an Ewald test meal showed HCL. ++, free HCL. 88, while the total acidity is 100.

Examination of the abdomen: Well formed, pan. good, recti deficient, but when deep pressure is made over epigastrium they become resistant. Splashing sound elicited over upper one-third of epigastrium only and to left of median line. Deglutition sounds occur in the normal time.

Thread test: Three strings were negative.

By treating this case with a corrected dietary, regulating her habits and overcoming the constipation, she steadily improved, until a second gastric analysis showed a reduction in the total acidity to 70, and a reduction in the Free HCL. to 46. There is such a marked similarity in the cases of this type that I will pass to an example of the type in which fright and fear (shock) are the etiological factors. Mr. J. B., age 44, occupation R. R. engineer; weight 196, and is over six feet in height. Early history negative, and denies any specific history. Present history is as follows: Eight months ago he was in a freight wreck and experienced a great mental as well as physical shock. Two weeks later while in the hospital he complained of an intense burning in the epigastrium, accompanied by nausea and slight pain. This seemed to appear between meals and was relieved by food. These symptoms grew considerably worse, until he was having cramp-like pains and vomiting daily. There were periods when he was quite comfortable. The following points were brought out in the examination:

Physical examination: Patient in a highly nervous condition. Examination of the heart showed it to be of normal size and position, with a faint blowing murmur in the mitral area and not transmitted. Lungs showed nothing abnormal.

Abdomen: Well formed, recti normal, slightly sensitive in epigastrium, no points of tenderness, colon distended with feces.

Blood examination: Haemo. 82 per cent; leucocytes normal, R. B. C. 4,600,000, Poly's normal blood pressure 108 M. M.

Gastric analysis: HCL. ++, Free HCL 80, total acidity 110; Dextrin ++. No occult blood.

Urine examination: Sp. Gr. 1019; no alb., no casts, indican ++.

Feces. Poor fragmentation and striated muscle fibres; no occult blood on a meat free diet.

Thread test negative. Deglutition sounds normal. Splashing sound over upper two-thirds of epigastrium to upper border of the navel.

Rectal examination showed a dry, glazed appearance to the mucous membrane. Under treatment he did very well.

Case number two of this type is quite like the former in so far as the etiology is concerned. The man was a motorman in the employe of a local company; his car was in collesion which resulted in the death of a passenger; he experienced an intense nervous

shock, and his digestive disorders dated from this time. The course and treatment of this case were like the former. In both cases there had been no digestive disorders prior to the accidents spoken of. The foregoing cases are quite typical and demonstrate very well the facts which will add to the mass of clinical evidence, establishing hyperchlorhydria as a separate and distinct clinical entity, and not only a phase of hypersecretion.

The dietician and the hygienist play a part equally as important as the man who relies solely on the medicinal treatment of this condition, and the success of the medicinal treatment is absolutely dependent upon the former, but the reverse is not always so, as many cases improved on a regulated diet. The hygienic management consists in regulating the daily life and habits, and those whose occupation entails great responsibilities should be relieved of all mental strain and have an entirely different environment with the suggestion that they lead a quiet, normal life. Those with a predisposition to hyperacidity should avoid errors in diet, physical and mental overwork.

The dietetic treatment is without doubt extremely important and in uncomplicated cases occupies a more important place than the medicinal treatment. In the first place, all foods which are liable to irritate the gastric mucosa and stimulate the glandular activity should be excluded; also avoiding extremes of temperature in both solid and liquid food. Patients should be advised to eat slowly and thoroughly masticate their food, to lessen the possibility of irritation. Pepper, mustard, horse radish, spices and the organic acids should be strictly prohibited, as should all alcoholic beverages. In so far as it is possible the diet should be rich in protein, with an elimination of the starches, while it is true that the total acidity is greater in a protein diet, there is a decided reduction in the free H. C. L. It is a well recognized fact that beef, meat juices and meat extractives excite and stimulate the gastric secretion, consequently when meat is given it should be well boiled to remove the extractives.

Eggs and milk are excellent substitutes for meat, and are most generally used, while oatmeal, which is rich in protein, is a useful substitute. The role of sugar and fats in this condition is prominent, and when H. C. L. appears early and interferes with the digestion of carbohydrates, dextrinated carbohydrates, such as toast and zwiebach, greatly assist amylolysis. Concentrated sugar solutions diminish the amount of free hydrochloric acid, and also the total acidity, and may be given in a variety of ways, such as honey, jellies and sweet dishes. Fats act not only in hindering gastric secretion, but they actually diminish the quantity of free H. C. L. and are best given in the form of butter, cream, milk and breakfast bacon. Olive and cottonseed oil diminish the gastric acidity and their efficacy depends entirely upon the time of administering them; thus oil given one-half hour before meals will retard the acid secretion, and when given one-half hour after meals the acid contents are unchanged, and its only action is to retard the evacuation of the stomach, which is not the desired result. As an antacid, and because of its calorific value it should be given one-half hour before meals. As to why it should act in this way, there is considerable difference of opinion, and because of the absence of a more definite explanation we shall have to accept the statements that its activities are due to a reflex central inhibitory stimulation as advanced by some writers. Fats are particularly indicated in cases of hyperchlorhydria accompanied by constipation. In so far as the liquids are concerned in this condition, it is desirable to have the patient use alkaline mineral waters (free of carbon dioxide); these they may have with meals, as they only dilute the gastric juice. Coffee, tea, alcoholic stimulants should be excluded as well as ice water and liquids that are too hot. Cocoa and milk are the ideal beverages. I have had excellent

results in enforcing a salt free diet, and the importance of this feature in the dietetic instructions ought to be strongly emphasized.

Little else can be said of the dietetic treatment, excepting that in these cases it is best to increase the number of meals to five or possibly six, giving the patient the three regular meals and a light lunch between meals consisting of a sandwich made with Philadelphia cream cheese or yolk of hard-boiled egg, which has been thoroughly mixed with butter, and a glass of milk.

The important object of the medicinal treatment consists in administering drugs whose activity is confined to the gastric mucosa alone, with the hope of allaying the local inflammation by their astringent action and in this way diminish glandular activity with the consequent reduction of H. C. L. The most generally used drugs are bismuth subnitrate, atropine and the silver salts. The bismuth is of special value because of the chemical change brought about by the action of H. C. L., which results in the formation of nitric acid, which acts as a direct astringent. The bismuth subnitrate can be given twenty minutes before meals in doses of one to four grams. Atropine is best given as the extract of belladona, one-third to one-half grain three times a day before meals. Of the silver salts, the nitrate is best given in dilution of one to eight hundred or a thousand; of this a tablespoonful is taken twenty minutes before meals three times a day.

Alkali mineral waters are of course indicated in this condition. Hydrogen peroxide in teaspoonful doses in three-quarters of a glass of water after meals is a remedy used by some. I have used it in two cases, but with no satisfaction. The following is the report of the gastric analysis in the American and German cases, and shows very clearly the relative increase in the H. C. L.:

| Case | HCL. | Free HCL. | Total acidity. | Lactic. | Rennet. | Pepsin. | Maltose. | Occult. Blood. |
|---|---|---|---|---|---|---|---|---|
| No. 1 | ++ | 72 | 88 | No | + | + | - | No |
| No. 2 | ++ | 76 | 90 | No | + | - | + | No |
| No. 3 | ++ | 80 | 110 | No | · | + | + | No |
| No. 4 | + | 74 | 86 | No | + | + | + | No |
| No. 5 | · | 78 | 88 | No | + | + | + | No |
| No. 6 | + | 76 | 90 | Trace | · | + | + | No |
| No. 7 | + | 82 | 86 | No | + | + | + | No |
| No. 8 | + | 82 | 90 | No | · | + | - | No |
| No. 9 | ++ | 86 | 90 | No | · | + | + | No |
| No. 10 | · · | 84 | 88 | No | · | + | + | No |
| No. 11 | ++ | 88 | 90 | No | · | - | + | No |
| No. 12 | + | 86 | 94 | No | - | + | - | No |
| No. 13 | + | 84 | 90 | No | + | + | + | No |
| No. 14 | + | 72 | 80 | No | + | + | + | +8 sec. |
| No. 15 | + | 78 | 84 | No | + | · | + | No |
| No. 16 | ++ | 84 | 90 | No | · | · | + | No |
| No. 17 | + | 84 | 88 | No | + | + | - | No |
| No. 18 | + | 82 | 86 | No | + | · | + | ++12s |
| American cases. | Average free HCL 84.5 | | Average total acidity 90 | One case | | + | + | Two cases show blood. |
| German cases (twenty-one). | Average free HCL 88 | | Average total acidity 94.5 | Two cases | + | + | · | Four cases showed blood. |

Certainly the relative increase in the H. C. L. in these cases is perfectly apparent. I believe the percentage for H. C. L. in both series is rather high, but with such data I cannot believe that it is only a feature of hypersecretion.

# THE EFFECTS OF ALCOHOL UPON MENTAL AND NERVOUS DISEASES.*

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In presenting this subject to a scientific body like this, if we had the power to lay aside all preconceived ideas and view facts and not prejudices, what a pleasure would be our task. In reviewing the massive literature, we find much of it argumentative rather than academic. Very few permit the truth to develop, as the facts are evolved; but facts, partial or speculative, are used to prove some preconceived theory. Alcohol is a biochemical substance as old as carbohydrates and the yeast plant, *saccharomyces cerevisiae*. Alcoholic fermentation appears to be an extremely common process. The belief is prevalent that alcohol is produced in the human body by carbohydrate fermentation under the influence of the baccillus coli communis:

Historical—In the mythical past, before the dawn of history, man used some substance to help increase the joys of life, or deaden the keen edge of sorrow, and alcohol in some form has been most extensively used. Egyptian monuments and Chinese manuscripts contain the records of the use and abuse of wine. The Vedas contain prayers to the Deity: beseeching him to condescend to come and get drunk with his worshipers, that he might grant their requests and bestow favors upon them, which, when sober, he would refuse. The Old Testament gives graphic accounts of its abuse, and is full of warnings against drunkenness. As civilization has advanced we have learned to make drinks with a higher content of alcohol, and have taught the uncivilized to substitute these for the simpler fermented drinks. Everywhere the use has been bound up in the routine of man's daily toil, in the expression of his emotions, and in the performance of his religious rites.

Pharmacological, Psycho - Physical—The leading pharmacologists class alcohol, when once in the blood and tissues, with the anesthetics and narcotics, such as ether, chloroform, chloral, paraldahyde, etc. Its use as an anesthetic is much older than that of ether or chloroform. Among bonesetters it was their custom to give large quantities of alcohol to dull the pain and produce relaxation. It was also resorted to in capital operations in the pre-etherization days. Even now it is often used to dull pain for tooth extraction. Is it a stimulant, muscular or mental? This question has called forth a massive and ingenuous amount of experimentation. In popular language it is still referred to as a stimulant, but the best experimental evidence goes to prove it to be in no sense a stimulant. In small quantities it generally produces a feeling of well being and good fellowship, along with increased confidence in the powers, both mental and physical. In speaking of a certain type of individual, James says:

> "It is the absence of scruples, or consequences, of consideration, extraordinary simplification of each moment's outlook, that gives to the explosive individual such motor energy and ease."

This description applies to the individual who is under the influence of a moderate "quantity of alcohol:"

> "It tends to turn the inhibitive type of mind into the 'hair-trigger' type. We have said that the speech and bearing of men, the play of their features, all bear witness to the action of alcohol on the brain; that it removes restraints, blunts too acute sensibility, dispels sensations of fatigue, causes a certain type of ideas and mental images to follow each other with greater rapidity and gives a 'cerebral sense of richness.'" (Abel.)

All forms of mental and muscular activity have been tested on individuals accustomed and unaccustomed to the use of alcohol, with and without, and the results seem to be almost unanimous that every form of mental activity is decreased by its use in small or large quantities. Prof. Kraeplin of Munich,

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one of the greatest psychologists in the world, has made the most extended and exhaustive line of experiments, and is very frequently quoted. He selected a number of accountants of different ages and measured the amount of work for a certain number of days without alcohol. Then gave four cupfuls of claret, to be drunk in small quantities throughout the day. The work fell off three and one-tenth per cent on the first day, and by the end of the week efficiency was reduced 15.3 per cent. Then he took away the wine and at the end of four days they were restored to their former efficiency. Then typesetters were given a measured amount of work, using the printed page as copy, and capacity noted. They were then given alcohol, and at the end of one week their efficiency had decreased 9.6 per cent. Alcohol drunk with meals is less injurious than taken between meals or late at night. Men abstaining from drink during the day, but taking heavy drinks upon retiring, lost on the following day 27 per cent of their coordinating power. Kraeplin was unable to find any time at which alcohol was taken without reducing efficiency. The ability to reason quickly, the power to grasp facts, and to bring complicated ideas into interrelation, these and all other mental processes are slowed down or rendered less active. Among Arctic explorers or soldiers on long marches, those receiving alcohol fall out first.

Cushny, one of the world's leading pharmacologists, says:

"Even the smallest quantities of alcohol tend to lessen the activity of the brain, the drug appearing to act most strongly, and therefore in the smallest quantities, on the most recently acquired faculty, to annihilate these qualities that have been built up through education and experience, the power of self-control and the sense of responsibility."

Helmholtz, that master mind, says that the smallest quantity of alcohol sufficed to dispel from his mind every idea of the creative order when he was trying to give form and being to some dimly seen conception.

Schenedeberg refers every alteration in the field of consciousness to a primary paralytic action of alcohol, however elusive to analysis and detection the paralysis may be. The stimulation of the emotions and faculties is but fictitious, and is in reality due to the removal of the barriers of self-restraint by the paralysis of the higher functions.

Pathology—The injuries of alcohol upon the body are represented only in part by known anatomical lesions. The burden of the pathological changes in the tissues of alcoholics does not always fall upon the nervous system. Some individuals are much more susceptible than others. The vascular system is often most seriously affected and the other changes are secondary to this. In acute alcoholic intoxication Welch noted the following:

"Two different kinds of lesions of the nerve cells have been found in acute poisoning of animals by alcohol, the one revealed by the Golgi method being of the cellular processes, and the other, shown by Nissl's stain, being of the body of the cells. The former, described as 'The Moniliform change,' is characterized by the apperance of irregular swellings or varicosities in the course of the protoplasmic processes of some of the nerve cells, associated with partial loss of the delicate bud-like or spinous projections normally present on the processes. The other change, designated 'chromatolysis,' is the disintegration of the small, stainable granules, known as the Nissl bodies, which can be demonstrated by certain methods of hardening and staining within normal nerve cells. . . . Nerve cells altered in the ways described have been found in the cerebral hemispheres, the cerebellum, the medulla oblongata, the spinal cord, and the sympathetic ganglia."

I will epitomize some of the changes in the nervous system of 125 autopsies of patients dying with a definite history of excessive alcoholism, as noted by Lambert at Bellevue Hospital (90 men and 35 women). The lesions in the central nervous system seem to be brought about either from the degeneration of the cerebral arteries or from the direct action of alcohol on the nerve cells. In examinations of given brains, it is difficult, or often impossible, to differentiate how much the

changes are due to one or other of these causes. Oedema and congestion of the membranes and cerebral tissue are usually present. Adhesions of the dura to the skull, with increase in the Pacchionian bodies, are common and very frequently there is thickening, opacity, and adhesions of the pia. Chronic meningitis combined with atrophy of the convolution was common.

Cerebral degeneration seems to be more common among women and corresponds with the clinical experience that women degenerate mentally from alcoholic excesses more quickly and more completely than men. Pachymeningitis is not uncommon and pachymeningitis hemorrhagica is not infrequently seen in alcoholics, probably from trauma acting on the diseased vessels. All inflammations in alcoholics seem to be prone to the hemorrhagic type and hemorrhagic meningitis was present in three men.

Microscopical examinations of the cerebral tissues show an intense degree of atheromatous degeneration of the minute vessels, which are enlarged, often torturous, unevenly distended, usually by fusiform dilatations, and their tissues covered with nuclear proliferations. About these vessels the spider or glia cells are crowded in great abundance. These so-called scavenger cells form, with their branching processes, a thick connective tissue felting, densest just underneath the pia, converting the outer fourth of the cortex into a closely matted layer, much diminished from the normal thickness, and often clearly mapped off from the layers beneath. The perivascular spaces are often filled with lymphoid cells. The second and third layers of the cortex show but little change, but according to Bevan Lewis a few of the low, pyramidal cells may be degenerated; the fifth layer of motor cells show extensive fatty degeneration, and, with spider cells beneath, is undergoing disintegration and absorption. The cells show a marked degeneration of their apical processes, and, in many, these have disappeared. The white matter of the cortex shows equally extensive atheromatous changes in its vessels. The changes found in the spinal cord are similar to those of the cerebral cortex. The paralysis produced by peripheral neuritis was formerly described as of two types—the first, in which the degeneration of the axis cylinder was primary; the second, the interstitial type, in which hyperplasia of the endoneurium and perineurium were primary, pressure atrophy following in the axis cylinder processes. The acceptation of the neuron theory causes us in the vast majority of cases to believe the neuritis of alcoholics to be of central origin.

Insanity.—"Besides the alcoholic deliria, we may have mental disturbances simulating a whole host of other affections, mania-like conditions, melancholias, chronic persecutory insanity, counterfeiting paranoia, epilepsy, stuporous conditions, morbid impulsiveness, and progressive dementias. The essential characteristic of the whole series of alcoholic insanities, is to be found in the progressive mental weakening with consequent deterioration of the finer ethical and intellectual attainments." (Berkley.)

In a collective report from a large number of insane asylums of the U. S. A., the percentage of inmates directly or indirectly traceable to the effects of alcohol, was about 20 per cent out of 30,000 inmates. Many of these individuals not quite up to the standard, were unable to bear the stress of life and competition, fell a victim to alcohol, then into the different types of insanity. Without becoming victims to alcohol many might have escaped the asylum. Then indirectly many of alcoholic inheritance become insane in substitution for alcoholism. Thus, alcohol works in a vicious circle. One alcoholic may be the starting point of a family of criminals, degenerates, epileptics, inebriates, and insane.

"The most striking feature is an unreasonable irritability, which frequently leads to outlets of passion of a blindly impulsive character, of which their families or their associates are often the victims. Wife-beating, inhuman treatment of children during the stage of inebriety, attacks upon associates upon the slightest provocation, are of

daily occurrence. The brutalizing influence of the drug, too well known to need minute description here, is shown in the loss of moral sense, indifference to the feelings and sufferings of the family, and to the loss of honor, or position, which inevitably follows the continued indulgence. The alcoholic is enwrapped in himself; he becomes a brutal egotist, careless of his work, his standing, of everything that he formerly prized." (Berkley.)

The end results of all types, if life is prolonged, is dementia to them kind nature's blessing.

Epilepsy—Epilepsy can be produced directly by alcohol in heavy drinkers, proof of which is that when alcohol is given up the convulsions cease. As high as eight to ten per cent of alcoholics eventually have epileptic seizures the first usually after a prolonged debauch. At old Charite in Paris a large per cent of alcoholics were epileptics, supposedly due to chronic alcoholism. Periodic drinkers in ancestors often shows itself in the offspring by epilepsy. There is much evidence to prove that many epileptics were conceived when one or both of the parents were intoxicated. In France, Fere states that among 308 male epileptics, 118 were descendants of alcoholics; and of 286 females, 130 were from alcoholics. Statistics everywhere vary from 30 to 70 per cent of epileptics being descendants of alcoholic forbears.

Heredity—That alcoholism is inherited is a matter of every day observation, and scarcely admits of scientific doubt. The children of abstaining parents, when compared with drinkers' children, give some very astonishing figures. Howe, in Massachusetts, found 145 of 300 idiots were descendants of drinkers. In England, Beech found in 430 idiots that 31.6 per cent were children of alcoholics. In Paris, of 1,000 idiotic epileptics and weak-minded children, 471 had alcoholic fathers, 84 alcoholic mothers, and in 65 both were drunkards. In 209 neither parent was alcoholic. In Normandy, Dahl found that 50 to 60 per cent of idiots had one or both parents alcoholics.

Alcohol being a cell poison, it is not surprising that the germ plasma becomes so much weakened that the offspring becomes sterile in a few generations and nature thus rids herself of these undesirables.

Alcoholism—An alcoholic is one who either continuously or at certain periods suffers from a craving for alcohol or one of its substitutes.

If you can agree with me that alcoholism is a definite disease, is not an inborn or cultivated "cussedness," then we have a common basis of reasoning. To acquiesce in the popular belief that an alcoholic is one who drinks because he enjoys the sensation, and can give it up or continue it at his will, then we are treating an unfortunate class very unjustly. Old beliefs are given up reluctantly; but the teaching that alcoholism is a disease is not new. The ancient Egyptians recognized alcoholism as a disease and treated it as such. Heroditus, 500 B.C., wrote that "drunkenness showed that both soul and body were sick." Diodorus and Plutarch claim "that drink madness is an affection of the body which hath destroyed many kings and noble people." The Greeks passed laws forbidding women to use wine and restricting young boys. Saint John Chrysostum in the first century asserted with emphasis that alcoholism was a disease like dyspepsia. Other early Christian writers made like statements. The Romans took a similar view. In 1747 Condillac wrote of alcoholism as a disease, and urged its proper treatment. He contended that the impulse to drink was like insanity, an affection of the brain, which could not be reached by law or religion. To Dr. Benjamin Rush, in the latter part of the eighteenth century, is due the honor of giving a clear statement as to this disease. In two essays, entitled "The Influence of Physical Causes Upon Moral Faculties," and "An Inquiry into the Effects of Ardent Spirits upon the Human Body and Mind," he described the disease of alcoholism, dividing it into acute and chronic forms, giving many causes, among which heredity was prominent, and he urged the necessity of

treatment in hospitals for that purpose. During the nineteenth century French, German, English and American writers have produced a mass of literature and agree that alcoholism is a disease, and should everywhere be recognized and treated as such. Heredity and environment are the chief causes. It is a humiliating acknowledgment, but is apparently true that all who are not alcoholics by heredity can become so by its prolonged use.

Prof. Howell says:

"Those who employ it in excess are in danger of acquiring an alcoholic thirst or habit, toward which the body possesses no counteracting regulation. When food is eaten in excess we experience a feeling of satiety which destroys the desire for more food, and some regulation prevails in the case of water. With alcoholic drinks however, the desire may continue long after the alcohol taken has begun to exert an injurious action upon the tissues."

The psychologist, James, has well said:

"The reason for craving alcohol is, that it is an anaesthetic, even in moderate quantities. It obliterates a part of the fevered consciousness and abolishes collateral trains of thought."

Let no one deceive himself into thinking that he can use alcohol with impunity and give it up at his pleasure. Your cells have the same affinity for alcohol as your fallen brother's (or his ancestors once had), and you and yours can fall into the same gutter to curse yourself and be cursed by your abstaining but unsympathetic brother.

Classes—(1) The constant drinker; (2) the periodical drinker; (3) the dipsomaniac; (4) the voluntary drinker; and (5) mixed cases. Then the many types of delirium, and lastly, dementia.

Constant—Those who feel the constant need of alcohol and indulge in it daily. In this type craving is present whenever the supply is stopped. Many who think themselves only social drinkers belong to this class. The test—abstain for one month, and if you find your nerves just as steady without it as with it, then you have not contracted the disease. Second, those who have no craving between attacks and may even abhor alcohol, and those who indulge to excess. They are often people most fastidious in their taste, correct in dress, without reproach in morals, chaste in speech, and punctilious in their choice of companions. Suddenly desire for drink overwhelms them and they sink into the lowest depths, seeking the vilest companions, becoming filthy in dress and odious in language. They revel in drink and viciousness for a time, and just as suddenly become satiated, completely disgusted with drink, and their companions. They claim a change of heart—never to return to the mire again. Be not deceived; this is only temporary, lasting only a few years or months. The old desire will return; he has not reformed; his tissues are saturated and his stomach nauseated. The intervals become shorter, and the sprees longer, until finally they overlap and the individual is a hopeless inebriate. Third, dipsomaniacs—those who become mentally excited of a maniacal type every time they drink alcohol in any form. These have no craving between attacks, but are always insane during attacks. Many who have given their most serious study consider dipsomania as a form of mental epilepsy. Voluntary drinkers belong to the "cussed" type—those who drink from mere vice, and not to satisfy a physical craving; they drink or leave it alone, at their pleasure. They are not physical but moral alcoholics. These, before they realize it, may become the constant drinker.

Any of these on a prolonged spree may go into one of the forms of delirium. The treatment for the above mentioned types is institutional. Any of these can be sobered up and put upon their feet again; but to be of lasting value, many things are to be considered—and the chief one is the patient's full and unequivocal mental consent to give up and forego all the pleasures of alcoholic drink and its environment. To remove the craving I am of the opinion that there is some specific effect se-

cured by the combined use of atropin and strychnine nitrate. Others use the allied drug, hyoscine. Either of these properly administered will relieve them. But like all types of drug habitues, deep down in their hearts they do not want to give it up. On these one would not care to waste time; but, to the regenerated, the cure should be permanent. To this class, I believe, the state should aid and control. The ideal would be an institution to give a few weeks' treatment to relieve the craving; then some form of outdoor work, either on a farm or public highway for several months to restore them physically and give them moral tone, and time to acquire mental confidence.

There sat two glasses, filled to the brim,
On a rich man's table, rim to rim;
One was ruddy, and red as blood,
And one as clear as the crystal flood.

Said the glass of wine to his paler brother,
"Let us tell tales of the past to each other.
I can tell of banquet, and revel, and mirth,
Where I was king, for I ruled in might,
And the proudest and grandest souls on earth
Fell under my touch, as though struck with blight.
From the heads of kings I have torn the crown,
From the heights of fame I have hurled men down;
I have blasted many an honored name;
I have taken virtue, and given shame;
I have tempted the youth with a sip, a taste,
Which has made his future a barren waste.
For greater than any king am I,
Or than any army beneath the sky:
I have made the arm of the driver fail,
And sent the train from its iron rail;
I have made good ships go down at sea,
And the shrieks of the lost were sweet to me;
For they said, Behold, how great you be!
Fame, strength, wealth, genius, before you fall,
And your might and power are over all.'
Ho! Ho! pale brother," laughed the wine,
"Can you boast of deeds as great as mine"

Said the water glass: "I cannot boast
Of a king dethroned, or a murdered host;
But I can tell of hearts that were sad,
By my crystal drops made light and glad;
Of thirst I have quenched and brows I've layed;
Of hands I have cooled, and souls I've saved.
I have leaped through the valley, dashed down the mountain,
Slept in the sunshine, and dripped through the fountain;
I have burst my cloud fetters and dropped from the sky,
And everywhere gladdened the landscape and eye.
I have eased the hot forehead of fever and pain,
I have made the parched meadow grow fertile with grain;
I can tell of the powerful wheel of the mill
That ground out the flour, and turned at my will;
I can tell of manhood, debased by you,
That I have uplifted and crowned anew.
I cheer, I help, I strengthen and aid,
I gladden the heart of man and maid;
I set the chained wine-captive free,
And all are better for knowing me."

These are the tales they told to each other,
The glass of wine and its paler brother,
As they sat together, filled to the brim,
On a rich man's table, rim to rim.

—Ella Wheeler.

## SOME PHYSICAL REASONS WHY WE ARE WHAT WE ARE.*

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How frequently, in reviewing mentally the distinctive personalties of the collective mass of human beings who continually pass through the busy physician's sphere of more or less critical observation, do we, especially the alienist and neurologist, find ourselves particularly interested in the phenomena responsible for certain personal attitudes, either or both physical or mental, which give to the individual a personality individually distinctive from the general class to which he may belong. These features may lie within or without the range of symptomatology of a given pathological condition which one may at the time be concerned in analyzing, still there often comes to one the desire to ascertain the physical or psychic or combined process through which such end results accrue. We meet continually many numerous

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facial expressions which are more or less significant of the underlying mental status, again we find physical attitudes other than facial expressions, either permanent or transitory, but of more or less frequent repetition which we class as automatic or subconscious expressions, but which may be traced to purely mental operations. These little traits of physical attitudes, moral acquirements or mental habitudes, though they characterize one slightly apart in personal distinction from the general class into which they would otherwise fall, do not penetrate always the field of consciousness of the performer, but nevertheless are distinctive elements in the personnel of the individual.

In personality we recognize the expression of the status of the psycho-somatic totality of an individual, and these may occupy many aspects within the respective fields of normal and abnormal personages plus special education and environment.

Therefore, in the physically fit, with normal psycho-neurological units, and subjected to proper education and desirable environment, we have a right to expect great physical, mental and moral development in a commensurate degree. But if we modify these conditions one or more and have abnormal or defective psycho-neurological units, improper or no education or vicious environment, we must necessarily expect physical depressions, mental instabilities and moral obliquities in no commensurate relation.

The physically fit and properly educated may degenerate through environment to any stage within the range of moral obliquity, while some abnormal individuals, by special education or enviroment, may escape the results of natural tendencies, be taught to condone their certain defects and develop a desirable moral entity.

Certain physical acts or mental habitudes bearing no relation to the moral status of individuals, but characterizing them personally, are expressions of purely internal organization in strict accordance with normal reaction or inversely deviating to conform in erratic expression of impulses traversing defective psycho-neurological areas. Thus we note persons apparently physically fit, with a poise of the head not quite in keeping with their general appearance; examination reveals an ocular defect and the poise of the head is a subconscious attempt at compensation within the field of vision. On the other hand, a person with inverse nervous stability, or a normal nervous system under mental strain, or suffering from auto-toxicosis, when sudden or unexpected demands are made upon them will do the most unexpected and many times improper thing, with serious results, all due, however, to the internal organization.

Individuals of diverse nervous temperaments, by their facial expressions, physical attitudes, gestures, pronounced activity or immobility of expression give at once distinct evidence of lack of harmonious internal organization, and this also is a part of the personality. Hence each such individual attitude, act or condition, whether diverse or normal, is a fraction of the sum total in the personality of every individual.

Internal physical organization, either normal on the one hand or abnormal on the other, presenting divergent expressions, resulting in acts, attitudes and conditions desirable or undesirable, as the case may be, has some influence directly on the mental status, and is in turn influenced or controlled by the mind in certain definite degrees.

The mental status of any individual is the sum total of instinct and experience plus education and environment. Instinct I regard as an attribute alone of the subconscious mind in especial distinction to the field of the psycho-intellectualis, and is that inbred propensity which requires the human or other animal to perform certain acts entirely without the effort of thought or reason which are calculated to promote the comfort, well-being or protection of the individual or animal.

We observe in the new-born babe that instinct requires it to suckle and attempt to extract nutrition from anything placed within its mouth or reach entirely without reason or thought, sometimes before there is any evi-

dence of the dawn of the intellectual sphere. As its education advances through experience, it demands and does or attempts physical acts to select and acquire such substances as are especially agreeable to its taste, still without the ability to judge whether these particular articles are entirely beneficial or harmful. Thus begin desires which demand gratification.

The subconscious mind, then, is concerned primarily in the regulation of such physical functionings as will promote the preservation and well-being of the animal as is further demonstrated in the idiot, who, incapable of any higher mental status, suckles food and eliminates his bodily excreta, although he is incapable of any choice of circumstances or conditions under which the so-called reflex act is consummated.

The field of the subconscious mind and that of the psycho-intellectualis lies within distinct and independent boundaries, yet the intra-communication dominant and subdominant, stimulating or inhibiting physical functioning, are so intricate that their border lines are not distinguishable, excepting, perhaps, under the most critical observation and comparisons.

Our moral natures are actuated by our physical desires and demonstrated as mental states through the subconscious mind. These physical desires are the result of internal organizations and commensurate with all physiological processes, are influenced by hyper or hypo-normal stimulation or inhibition. These several conditions result through chemical substances as internal secretions, toxins, etc., acting on the normal neurological entity or inversely normal substances acting upon abnormal neurological areas, sometimes either or both. This of necessity gives expression to varied degrees of physical desires, with equally varied degrees in the intensity of the demand for gratification.

The moral sphere is primarily only a potentiality. Experience, education and environment, which are all inseparable as they relate to moral entities in the class of individuals whom we are in the habit of regarding as normal or nearly normal individuals and who are also classed respectively as morally fit and immoral individuals, but who nevertheless compose a class distinct from, and entirely independent of, a class with which immoral individuals are continually confounded—the A-moral individuals.

The A-moral is always a defective. Close observation will, I believe, reveal physical or psychical peculiarities which are anomalies extending beyond or existing before the dawn of the moral sphere. Their experience mostly results in inverse mental deductions. Education totally fails to modify or regulate their natures. Their moral sphere, if there be any, is in no way influenced by notions acquired through intellectual culture, and the most favorable environment fails to demonstrate any influence whatever upon their habits. The moral sense is absent, hence they are A-moral.

Their potential moral sphere cannot at best be raised within the range of psychic influences, and while there are present symptom complexes suggestive of histo-pathological entities, I feel that the condition should be regarded as an infirmity rather than classed as a disease.

The moral sense, by reason of its complexity, becomes one of the most delicate and vulnerable complexes of the mind. And the moral individual acquires such degrees of perfection in the scale of moral attitudes as his education in ethics has established specific ideas of right and wrong, less always the intensity of the desire demanding gratification.

The immoral individual is one who from more or less obscure causes violates the tenets of social ethics with full knowledge of such violation, but with no adequate idea of the value of his anti-social acts. He may pacify his conscientious scruples if they should arise uninvited on account of his previous education by regarding his conduct as private vices, or if accused of misconduct, his defense may be expressed in his belief in the so-called right of personal liberties.

The immoral individual presents a grossly extended and diverse field for study and comparison, involving many collateral sciences, including sociology, criminology, moral insani-

ties and other border-line conditions, with comparatively little satisfaction recognized in the final results of their study and attempts at classification except in individual cases. They permeate all grades of society. Their egotism or ego-centric proclivities are always predominant and symptomatic upon which neither argument nor reason has any influence, signifying some weakness of judgment.

The moral sphere, existing primarily as a potentiality, capable of development in direct ratio to the biological integrity of the psycho-neurological entities through which organization it exists, subject to education through experience and environment and developing under these influences such degrees of moral rectitude as is commensurate with the integrity of its impulses, further modified also by extrinsic and intrinsic autotoxic states, must therefore represent the gross psycho-neurological physiology of the moral sense.

All education begins with personal experiences obtained from our surroundings. The multiplicity of our experiences results in the extent of our knowledge because of the storing up of our experiences as memory pictures. The recalling of these stored-up memory pictures and comparison with each other and the communicated memory pictures from the experience of others results in higher education or knowledge, and an ability to reason, appreciation of the commensurate and relative values of the factors resulting in knowledge and their application represents our wisdom.

Our first knowledge undoubtedly comes through the tactile sense establishing a knowledge of the fact of our existence, this tactile sense being the elaboration of an afferent impulse within the cortico-medularis of the cortex, resulting in the storing up of a memory picture and the discharge of an efferent impulse, which in turn results in other physical organization.

Special sensation, through the organs of special sense, develops also with personal experiences and communicated knowledge in direct proportion to the integrity of the psycho-neurological units involved in their elaborations.

Therefore, it is apparent that the total afferent impulses of the general and special sense organs through the elaboration of their impulses by virtue of the special cerebral organization resulting first in the storing up of memory pictures, which result later in intellectual states which I have referred to as the psychic-intellectualis, while the efferent impulses resulting also from cerebral organization, but within the field of the subconscious or automatic mind, resulting in physical states, which reactive states are also in direct relation to the functional integrity of the psycho-neurological units elaborating the impulse, plus the physical state of the organs acted upon giving expression to these physical states. Then, further, the combination of the complete action and reactions from the impulses of afferent organs resulting in mental states and the impulses of efferent organs resulting in physical states, whether normal or abnormal, they are the factors which enter into the sum total of the finished psycho-somatic totality of the individual, the personality.

One's mind here can easily conceive the results from the long list of pathological entities, physiological deviations, or biological anomalies, whether hereditary or acquired, either alone or influenced by the autotoxic states so common and in many instances so continuous, as intrinsic autotoxic states especially exist and persist over long periods without arousing any suspicion on the part of the patient, so slight is the symptomatology.

With these facts in mind, have we not been guilty of some more or less important errors of misjudgment or otherwise in patients and individuals whose conduct we have reviewed? Have we not made a diagnosis many times of "willfully vicious" purely from the end results and the symptomatology, without an adequate knowledge or relative understanding of the process producing the symptomatology.

If we keep these factors in mind which are shown to aggregate in the sum total of individual personality, we will regard ourselves and others as we really are, the end results of definite psycho-somatic organizations, and not

primarily wholly individually responsible for the position we occupy at or above or below the level of acceptable moral standards, because they are demonstrable physical factors which we fail to comprehend, hence do not learn to condone and fail to control. *Therefore, we are what we are.*

## FISSURE IN ANO OR PAINFUL ULCER.*

By C. D. Render, M.D.,
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Among the many diseases that affect the rectum there is not one that produces so much excruciating pain and intense suffering, in proportion to the extent of its lesion, as an ulcer in the anal canal or grasp of the sphincter muscles. I have seen stout, robust men with a lesion of this kind suffer so much pain that they would cry like a child. Anal fissure has been discussed for many years, but particular attention was not brought to the medical profession until Boyer published an article in 1818 and another in 1849. Since then Bodenhamer, of New York, published a work on "Anal Fissure" that has done more to make clear its frequency and importance of proper treatment than that of any other man. The term fissure signifies an elongated slit or cleft. They are usually found in the mucous membrane of the anal canal or between the radiating folds at the muco-cutaneous juncture. Some writers apply the term to all forms of painful ulcer found within the grasp of the sphincter muscle, and it will be the object of this paper to deal with such ulcers irrespective of their shape. This disease occurs at all ages, but is more commonly found in adult life. Sex plays but little part in its frequency as it is found in women as often as men. The typical fissure is usually single and the shape of the ulcer varies, but in most cases is found to be elliptical and varying from one-half to three-quarters of an inch in length. They may involve only the mucous membrane, while others extend through the sub-mucosa and even expose fibers of the sphincter muscle. In other particulars they do not differ from any simple ulcer. Their base is usually bright red and bleeds easily upon touch. On account of the contraction of the sphincter muscle their edges are folded in and rest upon the base of the ulcer, thereby preventing healing and causing intense pain. Their location in most cases will be found at or near the posterior anal commissure, and frequently there will be found at the lower end of the fissure a hypertrophy of the skin or muco-cutaneous tissue which resembles an external pile and has been called the "sentinel pile." Any pulling or dragging upon this pile causes intense pain.

*Etiology.*—The most common predisposing as well as exciting cause is constipation. The fecal material accumulating in the bowel makes pressure upon the blood vessels, interferring with the nutrition of the parts, resulting in a diseased mucous membrane and the glands of the bowel fail to supply the secretion necessary to lubricate the stool resulting in a dry, hard, knotty mass to be expelled and during its passage through the anal canal the mucous membrane is stretched until torn; this is followed by infection and ulceration. There may also project from the hard fecal mass a seed or other foreign body that will scratch or tear the mucous membrane. The accumulation of feces and pressure upon the blood vessels may result in ulceration by pressure necrosis. Among other causes of anal fissure might be mentioned congenital narrowing of the anus. Careless introduction of syringe tips, passage of foreign bodies which have been swallowed or introduced into the rectum, venereal or other ulcerations. Any condition that produces prolonged straining, such as stricture, diarrhoea, procidentia recti, polyps, or malposition of the uterus. Hemorrhoids are

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given as a frequent cause by some writers, and the very fact that a large majority of patients suffering from anal fissure are also afflicted with hemorrhoidal disease would indicate that there was some etiological relation between the two.

*Symptoms.* — The most pathognomonic symptom of anal fissure is pain, which will vary in its time, character and duration, but in the majority of cases the patient complains of a tearing or burning at the time of stool which is followed within ten to thirty minutes by a heavy, throbbing, excruciating pain due to sphincteralia or contraction of the sphincter muscles. This pain is so severe that these patients will easily become habitues to any drug that can be obtained for its relief. Reflex symptoms, as difficult or painful urination, pain in the sacro-coccygeal region and pains radiating down the legs are often present. Constipation exists in most cases and is further encouraged by the fear of pain at stool; as a result hard fecal masses accumulate in the rectum, which when expelled increase the traumatism and attending pain. Hemorrhage is usually of a slight degree, the patient complaining of a few drops of bright red blood following stool; however, in exceptional cases the blood may trickle down the legs and the patient faint as a result thereof. The discharge is usually slight, but when sufficient may accumulate between the radiating folds of the anus and by decomposition and irritation excite an annoying pruritus.

*Diagnosis.*—In most cases this is easily made by the history and description of pain following stool; however a careful local examination is always demanded. If the lesion be located at or near the muco-cutaneous juncture, is elongated in shape, extremely sensitive, and the patient gives a history of burning pain at stool, followed within a short time by a heavy, throbbing pain, we are then justifiable in diagnosing anal fissure. The best position for examining these cases is in the left lateral or Simm's position, and in order to modify the pain during examination pledgets of cotton saturated with 20 per cent solution of cocaine are introduced, after which the nates are separated and the patient asked to bear down, when the fissure may be easily brought into view. During the examination we may be able to observe sentinel pile, discharges from the bowel, or evidence of pruritus. The anal canal and lower rectum are next examined by introducing the index finger, which is one of the best instruments we have for rectal examination. As the finger is introduced we observe the tight, spasmodic condition of the sphincter muscles, the pain which the patient is suffering by the facial expression and especially is this marked when the finger passes over the ulcer, the patient crying out with pain. The finger may also detect polyps, tumors, foreign bodies, fecal impaction, or other diseased conditions that might exist. In the examination of women it is well to introduce the finger into the vagina and by pressing downward and backward the rectum is everted for inspection. The bowel is next examined with a bivalve or fenestrated speculum, and by means of a reflected light the ulcer is brought into view. In introducing the speculum or finger, it should be pressed to the opposite side of the anus from which the leision is thought to exist so as to minimize the amount of pain, as some of these patients will suffer so much pain that it is difficult to have them submit to an examination.

*Prognosis.*—The majority of these cases under proper treatment are promptly and speedily cured. However, if the disease is not properly handled and is complicated by hemorrhoids, fistula, or other disease, it may be prolonged indefinitely and incapacitate the patient to such an extent that he will become a nervous wreck. If fissure is left untreated it is likely to result in abscess formation, which may rupture internal or external to the rectum and leave the patient with a troublesome fistula.

*Treatment.*—The treatment of anal fissure

is divided into operative and non-operative, as palliation has no place in the handling of this disease. The first indication is to locate and remove the cause. If it be due to constipation, congenital narrowing of the anus, foreign bodies, venereal ulcerations, stricture, procidentia recti, polyps, or other diseased conditions, these are to receive prompt attention. The non-operative treatment will effect a cure in most acute cases where the ulcer is superficial and no induration exists. This treatment consists in rest, regulation of the bowels, control of the pain, and local treatment of the ulcer. Rest should be absolutely demanded, as walking brings into play the perianal muscles, which excite constant irritation and prevent healing. The bowels are best regulated by proper dieting, the use of olive oil or glycerine injections prior to the time of bowel action and some form of cascara internally. The pain and sphincteralgia are modified by anodyne ointments and suppositories, or by placing a pledget of cotton saturated with 20 per cent solution of cocaine upon the ulcer prior to defecation. The local treatment consists in cleanliness, cauterization and stimulating drugs. After the parts are thoroughly cleansed and anesthetized silver nitrate from 2 to 50 per cent solution is applied, or balsam of peru in 50 per cent solution. Another agent which has given good results is icthyol in from 10 to 25 per cent solution. In some cases the pacquelin or thermo cautery gives excellent results. After a reasonable length of time if the patient shows no signs of improvement an operation is advised. This consists in divulsion, incision and excision and is indicated in all fissures of extent where induration and hypertrophy of the sphincter muscles exist. Forcible divulsion was first practiced in 1864, and consists in having the patient completely relaxed under general anesthesia, placed in the lithotomy position and the dilation accomplished by the thumbs, index fingers or rectal speculum. The muscles are thoroughly stretched until temporary paralysis exists sufficient for the anal orifice to remain partly open. Divulsion proves beneficial in two ways—first by overcoming the spasmodic contraction of the sphincter muscles and placing the ulcer at rest; second, by relieving the patient of excruciating pain. This form of treatment should be practiced with great care on very old people or tuberculous individuals as it is likely to be followed by incontinence in such cases.

*Division* of the sphincter for the cure of anal fissure was first perfored by Boyer in 1788. The incision was made through the base of the ulcer and sufficiently deep to place the muscle at rest. If the ulcer be located in the anterior or posterior commissure, it is best to cut the muscle on either side, as an incision in either of the foregoing places would only separate the fibers of the external sphincter. The incision should extend beyond the extremities of the ulcer and about one-quarter of an inch below its base.

*Excision* consists in making an elliptical incision circumscribing the ulcer, after which it is dissected out, and the wound closed by catgut sutures or left to heal by granulation.

Illustrative cases:

The first case, Mrs. B. G., was refererd to me a few weeks ago by Dr. H. Swedlaw, of Birmingham, with the following history: Age 29, married, occupation housewife, height 5 feet 5 inches, habits good, family history negative, past history good. History of present trouble. About two years ago patient noticed that bowels were becoming irregular and taking on the costive habit. This was followed within a short time, while straining at stool, by a burning pain in mouth of rectum, which was accompanied by a few drops of bright red blood. She consulted her family physician, who prescribed an ointment that gave relief. She was then free from symptoms, except constipation, until two weeks ago, when she had an attack of severe pain at stool, accompanied by a slight protrusion and a few drops of blood. This was followed within a short time after stool by a heavy, dull, throbbing pain that was so excruciating that she could not rest day or night. She called her family physician, who prescribed the ointment she had used before, but it gave no relief. The pain was so intense that she was

taking laudanum to secure rest. She complained of considerable pain in the small of back, over the sacrum, and reflected down the legs. Purgatives were taken every night, followed by injections of olive oil the next morning before bowels would act in order to modify the amount of pain, but within the last few days they gave no relief. She was brought to my office on August 22, when an examination was made. Pledgets of cotton saturated with 20 per cent solution of cocaine were applied. The nates then separated, when an anal fissure three-quarters of an inch in length, involving the muco-cutaneous tissue, bleeding easily upon touch and located in the posterior anal commissure could be easily seen. The finger was introduced, which could detect a very tight and spasmodically contracted sphincter muscle. This caused intense pain, being necessary to give the patient one-quarter grain of morphine hypodermically. She was advised to go to the hospital, which she readily consented to do, and on the following day was given a general anesthetic. The muscles were thoroughly divulsed, the piles removed with clamp and cautery and the ulcer dissected out and base cauterized. The patient left the infirmary on the seventh day with the wound in good condition. The after treatment consisted in local applications and dilatation. Patient was entirely relieved following operation and able to resume her usual duties within two weeks' time.

The second case was referred to me on July 22 by Dr. Courtney Shropshire, of Birmingham, with the following history: Mr. A. G., age 23, occupation traveling salesman. Habits, smokes to an excess and is a moderate drinker; height 6 feet; weight 165 pounds; family history good. Past history good with the exception of constipation for the past three years. Present history: Trouble began about three weeks ago by noticing pain in mouth of rectum while at stool, also had a protrusion from bowel at that time, which was very sensitive, and noticed a few drops of bright red blood following stool. The pain increased and in a few days became so severe that he practically gave up work, only working four days within two weeks. He would have but little pain at stool, but it would come on about thirty minutes after stool and would be very severe for one hour or more. He called to see a physician in Montgomery and was told he had piles; the bowel was massaged, which caused him great pain and which was followed by no relief. In making the trip from Montgomery to Selma he states that while on the train his rectum was paining him so much that he went to the toilet one-half dozen times or more to apply mentholatum, and he says, "There are no words in the English language to explain the pain I suffered." He tried most all kinds of advertised pile cures with no relief, and was then told to hold ice next to his rectum, which he tried with no relief. He remembers about three weeks ago of going two days without bowels moving, and when they did move the stool was hard and caused considerable straining. He doesn't recall any pain at that time, but noticed a little bright red blood on the toilet paper after stool. This in all probability was the starting point of the ulcer. Patient was sent to the infirmary and given a general anesthetic. When the muscles were thoroughly stretched an ulcer the size of a dime was located in the posterior anal commissure. This was removed by dissection and the piles removed by clamps and cautery. Patient left infirmary on the seventh day, wound in good condition. The usual treatment was applied and followed by complete recovery, the patient being able to resume his usual work within two weeks' time following the operation.

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## THE RELATION OF THE MEDICAL PROFESSION TO ACCIDENT INSURANCE.*

By W. Edward Magruder, M.D.,
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For many years the direct connection between the medical profession and life insurance has been recognized—whether the physician be medical director of an insurance company, a local medical examiner, or is himself a policy-holder.

Accident and health insurance, however, have acquired their great popularity largely during the past few years and the rapidity of the growth of this business has been most phenomenal.

When we realize that this form of insurance protection was practically unknown in this country until the early 60's when the total premiums received by the companies then

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operating were but a few thousand dollars per year, and the net premiums paid by policy-holders for accident and health insurance in 1912 in the United States reached nearly forty million dollars, it must be apparent to us that the time has come when physicians must consider this branch of the business as deserving of recognition.

In this age of high pressure living, when things formerly thought luxuries have become necessary to our very existence and the high cost of living is bearing so hard upon us, the protection of incomes against their possible loss or curtailment through illness or accident becomes a necessary part of the system. In fact, the growth of short-term insurance in all of its forms has been the direct result of the needs of the times and its economic aspect cannot fail to be appreciated by anyone who gives the matter consideration. How often the insurance policy comes to the rescue of men from improvidence and their widows and children from positive want! How often it pays physicians for their services when otherwise their compensation would not be possible! How often it serves persons by enabling them to retain their self-respect, and how much better citizens they become thereby!

Personal accident and health insurance like that of insurance for life, has assumed two general forms—the industrial, which supplies the needs of the wage-earner who pays for it by the month or week—and the commercial or ordinary, which protects the business or professional man, who pays his premiums once, twice or four times each year. This form of insurance is based upon a contract or policy agreed upon by and existing between the company or insurer, on the one part, and the policy-holder, or insured, on the other. No medical examination is required as a condition precedent to the purchase of accident and health protection, but the statements made by the applicant in his application become part of the contract. The applicant, on his part, furnishes to the insuring company an application, the statements in which he guarantees to be true and agrees to pay the required premium provided the application is approved by the company, and in return for which he receives a policy contract in which the company agrees to assume the liability as set forth in its several provisions.

The evolution of the accident and health business has been characterized by many circumstances which have influenced its development. The very nature of the business made its beginning experimental. The large number of occupations each carrying its own hazard and the necessary adjustment of premium rates to suit these varied classifications of risks has not been made without the infliction of many hardships upon the insuring public. The collection and handling of large sums of money by insurance companies, the greed of officers and stockholders for their own financial gain, and the many temptations which have resulted from the desire of promoters to sell stock and secure large returns for the capital and labor expended, have many times worked injustice where justice should have prevailed. Fortunately, the time has come when, through rivalry between the different companies, they have been forced to construct and sell extremely liberal policies, and the enactment of laws in the several states has thrown around these companies safeguards which are protecting not only the public but the legitimately conducted insurance companies as well. The large number of companies now operating upon honest business lines indicates a future for the accident insurance business when it will become recognized as one of the benevolent institutions necessary to our industrial growth and one which promotes the welfare of the community as a whole.

In addition to the conditions which have assisted in the development of the business along liberal lines, the tendency has been toward simplification and unification of the policy forms issued by the several companies until, finally, the policies issued by the reputa-

ble companies are in simple language and their meaning is so well defined that litigation is now seldom required as a means to their correct interpretation. Aside from the requirements which have been forced upon them, the companies themselves have come to realize that clean, honest business methods form the only safe foundation for their continued existence.

It is not my intention to dwell upon the many errors which crept into the insurance business during its evolution and which led to frequent lawsuits, to general investigations by committees and to subsequent exposures—first, of the maladministration of life insurance companies, and subsequently of the unjust and unwarranted methods of claim settlements once practiced by some of the companies engaged in accident business. It is, however, my purpose to call your attention to the ultimate good such upheavals have worked, and to four distinct ways in which the medical profession is directly concerned in the growth and healthy development of accident insurance.

1. Physicians may be medical examiners for accident companies.

2. They may be attending physicians to persons who are insured in accident companies.

3. They may be interested in the valuable statistics which accident companies will ultimately contribute to the field of preventive medicine.

4. Physicians may themselves be policy-holders in accident companies.

From the standpoint of medical examinations for accident companies, the profession is distinctly concerned. Although no examination is now required of applicants when they secure their policies, many thousands of dollars are spent annually by accident companies in fees to physicians who examine and make estimates of the extent of injuries or the severity of illnesses which may have been suffered by their policy-holders. The frequency with which companies will call upon examiners in future to make medical investigations and report truthfully upon the facts and circumstances relating to the disabilities of policy-holders, will be greatly increased for several apparent reasons. In this age companies are compelled, not only to pay their legitimate claims, but to be able to show by conclusive evidence in the shape of papers in their claim files, that they are fully justified in any final action they may have taken. It will be upon their medical examiners that part of the future burden will be thrown and largely upon their reports will definite decisions be made. The importance to accident companies of physicians who are capable examiners and are at the same time able to correctly estimate the duration of the disability and to report it with equal fairness to the company and the claimant can scarcely be estimated, but the damage resulting from careless and partisan reports of examinations made by incompetent examiners can easily be imagined.

There is a growing tendency, which is rapidly taking shape, for several accident companies to unite in a given locality upon one examiner who may have proven himself competent, rather than distribute their examinations among a number, and the fees paid for work of capable examiners are growing in direct proportion to the quality of the service which they can render. The realization on the part of the accident companies that the employment of physicians to fill the positions of home office medical directors and local examiners is even more essential to their very existence than life companies have previously found it, will guarantee to members of the medical profession much future financial gain.

The examiner for accident companies in health or accident claims has many advantages over the examiner for life insurance. Instead of having his appointments made for him by the insurance agent or at the convenience of the applicant who has reluctantly consented to become insured, the accident examiner meets a very different condition of affairs. He not only has the right to make the examination as

part of the agreement made in the policy between the policy-holder and the accident company, but he usually finds the claimant most ready and willing to lend himself to such examinations, and instead of experiencing difficulty in locating him, the illness or injury restricts the patient's movements and further causes him to be available. That such examinations can usually be made just as well a day or two later than that upon which requests for them are received from the company is another advantage to the examiner, who can thus make them at times convenient to himself and often in connection with other neighboring work, and he can, therefore, handle such work without sacrifice to his private practice.

It is needless to say that the success of an examiner depends upon his tact and honesty quite as much as upon his medical knowledge, for, if he is not tactful and fair in the conduct of his investigations, obstacles will be placed in his way and material facts purposely withheld from him.

As attending physicians of patients insured under accident and health policies, the members of the medical profession are in almost daily contact with the accident insurance business. Each policy-holder, in order that he may comply with the conditions in his contract and avail himself of any indemnities to which he may be entitled, is compelled to furnish one or more statements from his family doctor upon blanks furnished by the insurance company. Upon the preliminary reports the company is guided in their estimate of the amount of money they must set aside in advance as a reserve in accordance with the law, for the payment of any indemnity which may subsequently become due, while upon the later reports of the attending physician, and such other information as may be secured from the claimant, from the agent, from the company's examiner, or through their confidential inspection service, the final action of the company is taken and payment is made upon the facts as they apply to the insurance contract held by the policy-holder. The role of the attending physician is not always a pleasant one in these cases, for it is often incumbent upon him to reveal facts in the claim blanks which prove that the condition for which indemnity is claimed is either not covered at all, or the amount actually due under the contract is less than that to which the patient desires his doctor to help him make claim, or the blank reveals facts previously withheld by the assured which, if they had been stated by him in his application, would have prevented the issuance of the policy or have led to limitations in its provisions. The physician is often in a position where he has to decide whether he will answer the questions fully and truthfully and possibly incur the displeasure of his patient, or whether he will give evasive answers in the claim blank and thus allow the company to guess at the true facts and, perhaps, guess wrong. Fortunately, even though the blanks received by accident companies from the attending physicians of their policy-holders, are often full of inaccuracies and may contain no single statement upon which an opinion can be formed, these same attending physicians will seldom fail to admit and subscribe to the true facts if questions showing knowledge of these facts are placed squarely before them. A better knowledge of accident and health insurance in its modern, simplified form on the part of the medical profession is rapidly coming to the relief of this situation and, as a result, physicians are demanding from the companies a square deal for their policy-holders and at the same time are refusing to lend their support in the collection of any claims which the contract and the true facts in the case show no liability. The influence which can be exerted by the medical profession in educating the public to deal squarely with corporations and to be satisfied with just treatment at their hands is greater than we probably realize, and this, coupled with an impartial investigation by the family physician, into any transaction which appears irregular, and the reporting of

wildcat companies and dishonest methods and agents, wherever discovered, to the proper authorities, will do more than anything else in placing the accident insurance business in a position where justice may be done to all.

Can we afford to avoid this responsibility and thus delay longer our help in placing this business in a position where it will work the greatest good to the greatest numbers? The opportunity is vested in the medical profession and we alone can bring about the "square deal" to all.

From the standpoint of preventive medicine the business of accident and health insurance is going to prove of great interest. Statistics relating to the recurrent diseases and diseases and injuries in their relation to occupation, locality and special conditions are being collected by accident companies and will determine with greater accuracy than has been previously possible many facts of interest to the whole field of medicine and bring the accident companies into closer relation with the community at large.

From the standpoint of being themselves policy-holders in accident companies, physicians are vitally interested. As physicians, all the provision we can make for our loved ones and our homes depends entirely upon our own personal efforts, so we, more than many others, are obliged to insure against loss of life or incapacity for work through unexpected occurrences. Septic infections, automobile injuries and the various dangers to which we are daily exposed must be insured against, and we are, therefore, dependent upon accident insurance companies to protect us against part of the loss such contingencies may produce. In justice to ourselves and those dependent upon us, it is incumbent upon us to see that our interests as policy-holders are properly protected.

We can assist in bringing about this result in the following ways:

1. By using our influence to the end that the companies operating in our several states are properly supervised, not unjustly taxed, are carefully administered and are honestly represented.

2. By endeavoring to prevent fraudulent claims or imposition upon insurance companies through the ignorance of the true conditions or cupidity on the part of our patients who are policy-holders, we can assist in reducing the number of unintended losses to accident companies, and, as a result, enable them to sell insurance protection at a much smaller cost.

3. It is our duty to ourselves and our families to immediately inspect our own policies and determine whether the statements in our part of the contract are true and the policy therefore valid, or whether, through carelessness or delegation of the matter to local insurance agents our applications contain incorrect statements which may reduce the value of or render absolutely worthless our own insurance policies.

924 Madison Avenue.

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## OVARIOTOMY SUB-PARTU.*

By W. Kohlmann, M.D.,
New Orleans, La.

Labor complicated with ovarian tumors is a condition occurring very rarely. It occurs much less frequently than uterine fibroids, especially if we consider the frequency of ovarian tumors, indicating that tumors of the ovaries in all probability predispose to sterility.

McKerron found one ovarian tumor in 2,500 cases of pregnancy. Fehling one in 891; Kerr once in 1,500; in the Berlin Frauenklinik once in 3,566 cases; Loehlein in 13,000 cases only twice; and Hartman of Cologne reports only one case in 24,000 labors.

Small ovarian tumors may cause no symp-

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tions, either in pregnancy or in labor. Large tumors situated above the pelvis in the free abdominal cavity may cause, on account of their size, over-distention of the abdominal cavity and symptoms of great general discomfort, such as dyspnoea, malnutrition, oedema, difficulty of locomotion, etc., but may not interfere with the progress of labor.

Whether or not these tumors increase more rapidly in size during pregnancy has not been definitely settled. Olshausen, Schauta and Fehling noticed an early rapid increase. Loehlein, in eighteen cases of his personal observation, did not report an increase in size. Williams, Pfannenstiel and Spencer-Wells have made the same observation. But if the tumor is situated in the small pelvis and if reposition in the general abdominal cavity is impossible, only under such conditions do these complications become of special practical interest. In this position ovarian tumors present a great difficulty and make the prognosis of labor very serious. Small cysts are already immobilized early in pregnancy, and on account of the pressure during the beginning of labor a rupture of the cyst is possible. McKerron collected in the literature 1,290 cases observed during pregnancy, labor and puerperium. The majority of these cases occur during pregnancy. Obstruction of the pelvis during labor he found in only 183 cases out of a mentioned total of 1,290. He reports having seen a rupture occur fifteen times in these 183 cases. The maternal mortality in these 183 cases was 25 per cent; the mortality of the children was 50 per cent. Winckel, 1901, reports a mortality of mothers of 39 per cent, of children 67 per cent, by expectant treatment. No doubt more recent statistics would show a lower mortality.

Beckman collected in the literature thirteen cases of Caesarian section without a death, and reports a similar case of his own. Ruehl reports five cases of vaginal incision of the cyst and delivery in the normal way. He himself reports a vaginal ovariotomy followed by normal delivery.

The following case came under my observation, and the infrequency of the occurrence of the complication of the ovarian cyst with breech presentation, which, in my opinion, was an additional danger to the child, prompted me to report the case.

Mrs. L., age 22. Admitted December 1, 1912. Discharged December 15, 1912. Patient consulted me the first time the latter part of November, 1912.

Status Praescens: Well built woman in excellent general health. Pelvis normal. Menses were always regular, accompanied by very little pain. Last menses March 6. 1912.

External examination shows the fundus uteri rather high, slightly below the xiphoid process. The presenting part of the foetus, which can be felt above the symphisis, makes the impression of the breech. The foetal heart sounds are heard on the right side of the abdomen.

Vaginal examination: The small pelvis is filled by a round and immovable tumor of elastic consistency. It is impossible to notice the slightest mobility of the mass. The cervix is found high up above the symphysis and can only be felt with difficulty. No foetal parts can be distinguished by vaginal examination. One week later labor pains set in.

By vaginal examination the same immovable mass was found as previously described. One examining finger could just reach the external os, which showed beginning dilatation. Small parts could be felt which verified, in connection with the findings of the external examination, the diagnosis of a breech presentation.

I concluded that if a careful attempt to reduce the tumor in the abdominal cavity under anaesthesia should not prove successful I would, in view of the fact that the foetal mortality in breech presentation is much greater than that of the cephalic, and that the presence of an obstruction would diminish even more the possibility of securing a living child, perform an abdominal Caesarian section and at the same time remove the obstructing tumor.

Operation: Ether anaesthesia. With patient in Trendelenburg position, tumor could not be pushed back, indicating most probably that adhesions existed. I then decided to proceed with the abdominal operation. Usual abdominal in-

cision. Before incising the uterus one c. c. of pituitrin was injected hypodermatically. By a high fundus incision a well-developed child in breech position was delivered.

The tumor, the size of a foetal head, was found adherent on its lower circumference. During the loosening of the adhesions the cyst wall broke slightly and some of the contents escaped, which showed a mucous character—mucous cyst of the left ovary. Patient made an uninterrupted recovery and left the hospital at the end of two weeks.

In the management of these cases the following procedures are mainly to be considered:

1. Vaginal ovariotomy and delivery by natural passages.

2. Abdominal ovariotomy and delivery by natural passages.

3. Caesarian section and abdominal ovariotomy.

In cases where the ovarian tumor is situated in the small pelvis and is liable to obstruct the expulsion of the foetus it is a rational procedure to make a careful attempt to push the tumor back into the abdomen—either in knee-chest or Trendelenburg position. This treatment is not always possible and is not without danger. McKerron reports 60 per cent successes with an 8 per cent maternal mortality. Treub reports sixty-one cases where the reposition was possible, with a mortality of nine mothers and eight children. In successful cases it was suggested, to prevent the return of the tumor, to puncture the bag, or to follow the advice of Benckiser and introduce a colpeurynter into the vagina.

If the reposition of the tumor is impossible, only such treatment is indicated which removes the obstruction not only temporarily but permanently, and this procedure is ovariotomy.

The puncture of the cyst by the vaginal route as a therapeutic measure should in a general way not be considered. Although it may be possible to empty the cyst in an aseptic manner, a secondary infection cannot with certainty be prevented. Besides, there are the dangers of puncture to be considered, such as bleeding, peritonitis, especially if the contents of the cyst should be infectious. Wertheim reports such a case with death following in forty-eight hours. McKerron, 18.6 per cent mortality. Treub (1907) gives under fifty-six cases a mortality of sixteen mothers and ten children. But even if the contents are not infectious, peritonitis develops readily as the tumor, partially emptied, suffers marked contusion and is therefore a good soil for the development of infectious bacteria. In such cases only the secondary extirpation may prevent death.

In cystic tumors, which are found in about 90 per cent of the cases, we should try to remove the growth by a vaginal ovariotomy and deliver by natural passages. In case it should be impossible to deliver the cyst through the vaginal opening on account of adhesions or intra-ligamentary development it is best to close the opening by suture, to deliver the woman as soon as possible and remove the tumor immediately by laparotomy—vagino-abdominal ovariotomy.

In case of solid or multilocular cystic tumor, or if the diagnosis of adhesions or intra-ligamentary development is probable, or in cases where the confinement might be expected to be of long duration, or in other abnormalities such as complications with small pelvis, or foot presentation—especially in primiparae—it is to be recommended to make a Caesarian section and remove the tumor.

In suitable cases Loehlein recommended abdominal ovariotomy to be followed by delivery by natural passages; this though should hardly be recommended, as the eventration of the uterus cannot be done without possible danger to the foetus.

Flaischlen mentions the danger of an early loosening of the placenta. Williams reports a case of a still-born child delivered eleven hours after laporotomy.

In certain cases the reposition of the uterus may be possible only under difficulties. In other cases it might be necessary to stop the

narcosis and the patient would have to go through painful delivery.

Such a procedure might only be considered if the ovarian tumor is easily elevated out of the pelvis, if delivery is possible by version or forceps during the same anaesthesia, or if in case of a dead child perforation of the skull should be considered.

The important points in the treatment of these complications are the following:

1. Vaginal ovariotomy in small tumors without adhesions, to be followed by delivery by natural passages.

2. Caesarian section and abdominal ovariotomy should be the operation of choice in all cases of solid tumors, cystic tumors with probable adhesions, or intra-ligamental development, or in all conditions where a prolonged and difficult labor could be suspected.

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DISCUSSION.

Dr. Brandau, Clarksville, Tenn.—I agree with everything the doctor said with the exception of one thing: The time of removing the tumor that might obstruct the labor. If we can succeed in delivering the child, we should not necessarily remove the tumor immediately after the delivery.

Dr. Thorning, Houston, Texas.—This brings to my mind very clearly what I think is becoming the attitude of nearly all men in regard to Caesarean section. Dr. Kohlmann advocates it, and I believe he is correct. I believe that Caesarean section will be done in the future very much more than it has been in the past. It has been proven a very simple operation with, practically speaking, no mortality from the operation itself. I believe that in a few years we will be doing Caesarean section in preference to high-forceps operations. I believe right now, in the hands of good surgeons, and under fairly reasonable surroundings, if the patient is not already infected with attempts to deliver, it is the safer operation for the child and for the mother than the high forceps. It is already being done in eclampsia, especially in primiparas, and other conditions which more and more are being considered as indications for Caesarean section rather than badly mutilating the birth canal with the usually fatal result to the child.

Dr. Kohlmann closes.—I believe that there is not the tendency at the present time to make Caesarean section as frequently as it was a few years ago. It seems to be the tendency of the men of today not to perform it so often, especially in placenta praevia. It can be done with safety.

There is one point I wish to speak about: that the tumor could not be removed after delivery; that would be practically impossible, and we have to do something. The tumor is in the small pelvis, so we have to incise it, and of course the tumor has to be removed immediately. We have to open the abdomen at once after the child is born and remove the tumor. We cannot wait long, because we have danger of sepsis, and that was the danger years ago—not only danger to the mother, but to the child as well, where the mo ... ers were infected. I remember one case where there was a tumor and it was not noticed at birth, apparently I saw the woman about one week later, when she had a large tumor. It was an ovarian cyst with twisted pedicle. Even if ovarian cysts are found free in the abdomen and do not obstruct the outlet, removal is advisable, as the twists of the pedicle are more frequent after confinement than in the normal condition.

## REPORT OF THREE INTERESTING SURGICAL CASES.*

By Geo. R. Livermore, M.D.,
Professor of Genito-Urinary Diseases, University of Tennessee; Genito-Urinary Surgeon, Baptist Memorial Hospital and City Hospitals,
Memphis, Tenn.

The cases I report presented so many interesting features to me I feel sure a detailed description of them will elicit discussion that will prove of benefit to us all.

Case No. 1.—A. T., white, female, age 38, unmarried. Father died age 62 of gangrene of leg, following thrombosis of popliteal artery. Mother living, age 65, and in good health. Mother had exophthalmic goitre in 1897 and recovered under rest and iodine. Patient was unusually healthy till past three years. Has worn glasses for astig-

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matism since she was 18. In June, 1910, began suffering with burning pain in lower right quadrant of abdomen. She took tampon treatment for about five months without benefit. In March, 1911, had acute appenditicis, with symptoms of ruptured appendix and had been ill forty-four hours when I was called to see her. She was rushed to St. Joseph's Hospital and an operation performed at once. On opening the peritoneal cavity free pus escaped, and as the appendix was not visible, the caecum bound down and nature had not walled off the infection, no attempt was made to remove the appendix, but a stab wound was made in the loin and through and through drainage instituted. Under Fowler position, Murphy drip and stimulation, she made a slow recovery and did not get out of bed until May, 1911. She was quite weak and nervous, and in the latter part of July had a severe shock, which greatly increased her nervousness. In the early part of August she left for Waukesha, and was taken sick on the train with nausea and vomiting, which continued for two weeks. After this attack exophthalmos, tachycardia and enlargement of the thyroid were first noted. She returned to Memphis and the following treatment was instituted: Rest, quinine hydrobromate, iodine, sodium phosphate and the application of an ice bag to the thyroid. At this time the right lobe of the thyroid was somewhat enlarged and tachycardia, exophthalmos, tremors and extreme nervousness were noted. There was some improvement, but when after six weeks patient was allowed to get up, all symptoms became markedly aggravated and the enlargement of the right lobe of the thyroid had increased considerably. The treatment was resumed without benefit till January, 1912, when she finally consented to an operation, which was performed at the Baptist Memorial Hospital, with the assistance of Drs. Percy Toombs and John Maury. The entire right lobe of the thyroid was removed. She began to improve at once and soon was able to resume her duties at home, although the burning pain in the lower right quadrant of her abdomen continued to annoy her. Examination revealed a retroverted uterus and some enlargement of both ovaries. In July she was sent to St. Joseph's Hospital and with the assistance of Dr. John Maury the appendix was removed. Both ovaries contained numerous small cysts which were punctured and the uterus was placed in position and held there by Gilliam's round ligament operation. The patient made an uneventful recovery and is now quite well. The exophthalmos has subsided, the tremor vanished and the nervousness almost unnoticeable. The left lobe of the thyroid has enlarged to some extent, but is causing no symptoms.

Case No. 2.—N. M., white, female, age 38, married. In 1906 had chancre on right lobus majus. After six weeks ulcerations appeared on various parts of body. She took protiodide pills for several months, but ulcers would heal in one place and break out in another, or an ulcer would heal on one edge and spread on the other. She was then given bichloride of mercury by hypo every other day, and after about a month all evidence of syphilis had disappeared. She was then given salicylate of mercury by hypo for about six months. This was then discontinued and protiodide pills given by mouth. After several months ulcers appeared in throat and on her legs. Hypos were again given and all ulcers healed except one on her knee. This continued to spread and soon became so severe she had to remain in bed for some weeks, and after getting out of bed had to use crutches for some time. As the ulcer on her knee healed, her mouth and tongue became involved and the ulceration of tongue was so severe her physician was afraid it would slough off. Her condition remained about the same till September, 1911, when I was first called to see her. At this time she had five serpiginous ulcers on various parts of her body and a reddish brown discoloration on her left cheek. She was weak, nervous and anaemic, had a hypertrophied heart with mitral obstructive and regurgitant murmurs and also an aortic regurgitant murmur. The urine contained a trace of albumen and some hyaline casts. I was afraid to give her salvarsan and hence put her on hypos. of bichloride of mercury 1-4 grain every other day, with caccodylate of soda on alternate days. Potassium, iodide Gr. XX in essence caroid t. id. p. c. and dose increased one grain each day. She began to improve immediately and all ulcers gradually healed except one near crest of ilium. This was markedly serpiginous and continued to spread despite all constitutional and local treatment. At this time Dr. Swinburne, of New York City, told me that he was getting good results from intramuscular injections of small doses of salvarsan in iodypin, and as I had exhausted all other means, in March, 1912, I gave her 2 grains salvarsan in iodypin in the buttock. The pain was very severe and she had malaise, aching and a temperature of 101 degrees F. in the afternoon. Two more similar injections were given, but the large serpiginous ulcers did not heal despite the fact that mercury,

potassium iodide, sodium caccodylate or atoxyl were continued at the same time. As she was losing ground, I explained the dangers and advantages of salvarsan intravenously and she said she would rather die than continue to suffer. So in June, 1912, I gave her 3 grains salvarsan intravenously. She had a violent chill followed by a temperature of 106, severe aching—an uncountable pulse and marked dyspnoea, but under stimulation with strychnine, atropine and saline per rectum she slowly improved and in about three weeks, mercury and potassium iodide being continued, all ulcerations had healed, and to date she has had no symptoms of returning infection. In October, 1912, she had a slight bloody mucous discharge from her vagina. Examination revealed a small uterine polyp and a hard indurated area in the cervix. The latter was sent to Drs. Krauss and Leroy, who reported it to be epithelioma. I advised complete abdominal hysterectomy, which I performed on January 18, 1913. She made an uneventful recovery and is now, except for occasional attacks of shortness of breath, enjoying good health. Mercury and potassium iodide were continued till two months ago, and I am now waiting another month before having a Wasserman made.

Case No. 3.—J. M., white, age 5, male. In July, 1913, complained of pain and burning on urination and urine was cloudy. This continued for about three weeks, when Dr. Allen, of Inverness, Miss., was called to see him. He found pus in the urine and put him on Urotropin Gr. V. t. i. d., and in two weeks the urine had cleared and he had no further trouble till the last week in September, when he had an attack of nausea, vomiting and fever, but no urinary symptoms, although the urine was cloudy. The fever continued for two weeks, sometimes reaching 104 3-5. Dr. Allen was again called in and after examining the urine and again finding pus, put him on urotropin again and sent a specimen of urine to Dr. Krauss, of Memphis. Dr. Krauss reported that it contained a large amount of pus, a few red blood cells, a large number of gonococci streptococci, staphylococci, colon bacilli and micrococci ureae. Dr. Allen then referred the case to me. The child was very hard to manage, and as irrigation of the bladder was out of the question without an anaesthetic, I determined to give the vaccines a trial. An examination of his blood showed no malarial organisms and no leucocytosis. So he was given 5 m. of colon, gonococcic, strepto and staphyloccic vaccine, together with urotropin Gr. 111 in glass of water t. i. d., with lithia when urination caused irritation. The vaccine was given at intervals of four to five days and was increased 5 m. at each dose. The temperature remained normal for eight days and then rose to 104 4-5. The blood was again examined and aestivo autumnal organisms found by Dr. Krauss. He was put on quinine bisulph. gr. III four times a day and he has had no more fever since. The urine continued to improve till after twenty-five days' treatment Dr. Krauss reported the urine free from pus and all pathogenic bacteria. I report this case because it is the first one after an extensive trial in which I have personally seen the vaccine cause a disappearance of gonococci.

Exchange Building.

## CONGENITAL PYLORIC STENOSIS, WITH REPORT OF CASES.*

By Lyle S. Booker, M.D.,
Durham, N. C.

There is at least one condition of the alimentary tract in early infancy which demands surgical treatment. The pediatrist must concede this one condition, and the surgeon must make good his claim. Then one more cause of infantile death will be known and may be averted.

The first reported cases of congenital pyloric stenosis was by Hirschprung, in 1888. The first successful operated case was by Lobker, in 1898; since this time the many reported cases have clearly established the clinical picture and pathologic anatomy. However, there is still considerable diversity of opinion in regard to many points of pathogenesis and treatment.

This diversity is no doubt in a large measure due to the fact that two types of condition exist and have been referred to under the same name. One, a simple spasm of the pylorus with some hypertrophy of the pyloric ring and pyloric end of the stomach. The

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other, in which the spasm is associated with a true hyperplasia in the walls of the stomach and duodenum.

These two types of disease probably stand in close genetic relation to each other, but practically they are very different. One is a functionable trouble and a medical disease; the other, a true organic obstruction and amenable to surgery only. Of the latter condition I beg to report the following case with courtesy to Dr. W. W. Olive, in whose practice this case occurred:

Ralph D.—The fourth child of healthy parents, was born at full term after a normal labor. He was normal at birth and weighed eight pounds. The first four weeks he was nursed at two-hour intervals and made decided gain in weight. During the fifth week he began to vomit at irregular intervals and to be constipated. The vomiting sometimes occurred immediately after feeding, but usually not for an hour or more. Sometimes several feedings were retained and then vomited together.

In spite of the very best medical and dietetic treatment the vomiting and constipation had progressively increased. The vomiting had become explosive in character, and the constipation almost absolute. Enemas and purgatives failed to produce more than small actions of bile-stained mucus. No milk curds were in evidence. He acted hungry at all times and cried a great deal, apparently from hunger.

When seen in consultation, then eight weeks of age, his weight was one pound less than at birth. There were present all evidences of malnutrition and marasmus. One was struck by the prominent appearance of the epigastrium as contrasted with the retracted, sunken abdomen below the umbilicus. Visible waves of peristalsis passing from left to right were easily seen. No distinct tumor could be palpated.

Examination of heart, lungs and nervous system was negative. Diagnosis of pyloric obstruction was made and operation advised. Patient admitted to Watts Hospital April 20, and after usual preparation, ether was administered and abdomen opened through a right rectus incision. The pylorus and duodenum, free of all adhesions, presented a small mass about one inch in length, size of distal phalanx of index finger, smooth and of cartilagineous firmness.

A posterior gastrojejunostomy was done after the method of Moynihan, using fine pagenstacher linen and zero catgut. Nothing was done to the pylorus, as nature had nicely obliterated this opening. Abdomen closed in usual manner and child returned to bed.

*Postoperative Course.*—Shock was insignificant, vomiting of bile at intervals for several days, and almost immediate improvement in child's condition, both favorable signs. Rectal feeding was done for first two days, then mother's milk was begun and continued. Patient was discharged from hospital in ten days, having gained a pound in weight.

Now, seven months since operation, baby weighs twenty-five pounds, fat and plump, and is a normal baby in every way.

I wish now to speak of the more important and accepted facts, namely, the pathology, diagnosis, prognosis and treatment.

*Pathology.*—In the face of its occurrence in the very young and almost exclusively breast-fed children its origin can scarcely be considered as being due to disturbances of digestion, diseases of the mucous membranes, or abnormal chemical processes. Its etiology is therefore obscure.

A tumor is always present—a passive tumor; muscle stimulation is not necessary for its existence. This forms a mechanical stricture just the same as a strictured urethra or bile duct. There are no adhesions or products of inflammation about it. It represents an overgrowth of muscle tissue.

Microscopically, the most important change is the great increase in the thickness of the circular muscular layer. To a lesser degree hyperplastic changes in the longitudinal and the connective tissue of the submucosa.

*Diagnosis.*—The appearance of vomiting in otherwise apparently healthy breast-fed chil-

dren is progressive and continuous, explosive in character, containing no bile; fails to respond to medical or dietetic treatment. The small meconium-like stools, containing almost no fecal residue, is not consistent with any other condition.

Physical examination verifies the diagnosis. The empty, retracted abdomen below the umbilicus, the full and distended epigastrium, the visible peristaltic waves and the palpable tumor are proof positive.

*Prognosis.*—Treated medically, most cases of congenital pyloric stenosis die of starvation, and marasmus, inanition, acute gastritis, catarrhal dyspepsia or pyloric spasm are credited on the death certificate.

Some cases of moderate degree get well, many of which, however, have to be operated before reaching maturity.

Dr. Murphy's February (1913) clinic reports a case two years of age weighing only thirteen pounds.

The estimated mortality from an expectant medical treatment is between 80 and 90 per cent. (Monier.)

What, then, does surgery offer?

From the first successful operation in 1898 to 1905, a period of seven years, the operative mortality was 46.5 per cent. A high mortality, but a great improvement over the medical mortality.

Since 1905 the mortality has been lowered to less than 10 per cent.

Dr. Scudder, of Boston, reports a series of thirty-three cases operated by different surgeons in the United States, with three deaths—a mortality of 9 per cent. The same author in *Surgery, Gynecology and Obstetrics*, September, 1910, reports a series of interesting investigations on the effect of gastroenterostomy in digestion and metabolism. Of fourteen cases studied, two to five years after operation, he concludes that with all chemical evidence and clinical facts considered, the evidence is overwhelming that in these babies gastroenterostomy has no ill effect on metabolism and normal growth and development. He further proves by X-ray examination that the obstructive tumor persists and that the operative stoma continued to functionate and accommodates the child in after life.

*Treatment.*—If, then, our pathologic picture be correct, the treatment will be obvious. No one would attempt to treat a mechanically obstructed esophagus, intestine, bile duct or urethra medically.

The two indications for surgical treatment are:

First, to meet the emergency of starvation by overcoming the obstruction at the pylorus.

Second, to restore the continuity of the alimentary tract so that it may serve the individual through life.

The best operation to meet the demands is the posterior gastroenterostomy.

CONCLUSIONS.

1. The pathogenesis of this condition is unsettled.
2. The diagnosis is usually not difficult.
3. The indications for surgical treatment are common sense ones.
4. The operation best suited to this condition is the posterior gastroenterostomy. It is ideal in that nature has prevented the possibility of a vicious circle by obstructing the pylorus.
5. The operative mortality is low.

## IODINE IN THE ABDOMEN, AFTER THE METHOD OF CRISLER AND JOHNSON.

By J. G. Gaither, M.D.,
Hopkinsville, Ky.

At the Lexington meeting of the Southern Medical Association Dr. J. A. Crisler read a report of the use of tincture of iodine and grain alcohol in over one thousand cases of suppuration in the abdominal cavity. This paper called forth severe criticism from several men in the section, one going so far as

to state that he would shoot any surgeon who was about to pour this mixture into the abdomen of his sister, provided there was no other way to stop him. A statement of this vehemence brought to my mind the oft-repeated story of the threats that were made not many miles from Lexington against the life of another pioneer, Ephraim McDowell, just before he performed his ovariotomy.

The purpose of this article is not to prove that general suppurative peritonitis can be cured by the introduction into the inflamed peritoneal cavity of the iodine mixture—although I believe it can—but to prove that it is a method which may be safely employed, that no such results will follow as did in the dogs spoken of in the discussion by Dr. Louis Frank, of Louisville.

I have used half alcohol and tincture of iodine in the following eight cases, in amounts from four to ten ounces. In no case was there ever the slightest suspicion of any form of poisoning or intoxication, nor was there evidence of any severe tissue reaction to the use of the mixture.

Case 1.—Dave T., male, white, age 10. Seen in consultation with Dr. S. H. Williams, of Crofton, Ky. History of attack of appendicitis three days previous. Temperature 100; mass felt in right iliac fossa.

Diagnosis: Appendicitis with abscess.

Treatment: Right rectus incision, cecum presenting in wound. Followed down to appendiceal abscess. This was opened. Three ounces of the alcohol and iodine mixture were poured into this abscess cavity after the pus had been mopped out. The appendix was removed and drainage instituted.

The patient made a splendid recovery, the temperature at all times being low.

Case 2.—Mrs. T. J. A., female, white, 23 years. Seen in consultation with Dr. Williams, of Crofton, Ky. Typical history of acute appendicitis. Examination confirmed this with a decided mass in right iliac region.

Diagnosis: Acute appendicitis with abscess.

Treatment: Abdomen opened and abscess cavity drained and mopped free of pus. This cavity then had six ounces of the alcohol and iodine mixture poured into it. I then removed the appendix, drained the abdomen with tubes and closed.

Patient made a speedy and uninterrupted recovery.

Case 3.—Mrs. Lucy W., white, female, age 40. Seen with Dr. J. E. Stone, of Hopkinsville, Ky. Gave a history of pelvic infection, with great masses present in each side, undoubtedly gonorrhoeal pus tubes.

Diagnosis: Bilateral salpingitis with pus.

Treatment: Median celiotomy revealed a mass of adhesions binding the sigmoid to the left pus tube, and the small intestines glued over the right. The tubes were both ruptured in the process of enucleation. The entire pelvis was poured full of the iodine mixture, then the tubes, ovaries and the uterus extirpated by supravaginal amputation. Tube drainage instituted and the operation completed.

Recovery was prompt and satisfactory, with practically no fever.

Case 4.—Levi G., negro, age 18. Seen with Dr. Austin Bell, of Hopkinsville, Ky. Was seized with severe cramping pains about 9 a. m.; took a dose of oil, vomited it, then suffered all day, and about 7 o'clock in the evening became suddenly easy. We examined him at 9 p. m., finding the abdomen board-like, the expression hippocratic, the pulse thready and 120.

Diagnosis: General peritonitis.

Treatment: Laparotomy through right rectus. Intestines all a dusky red, very thin and considerably distended. Appendix ruptured, no adhesions and lying beneath the umbilicus. The abdomen had about six ounces of the alcohol and iodine mixture poured directly into it, the appendix removed and tubular drainage introduced.

The patient had a stormy three days, with distention and rapid pulse, but gradually came through, and with the exception of a fecal fistula had no complications. This boy, in my opinion, would certainly have died under the usual operative treatment.

Case 5.—Wesley B., white male, age 17. Seen with Dr. Ezell, of Lafayette, Ky. Previous history showed an attack of acute appendicitis four days before. Examination showed a tense abdomen very painful over McBurney's point, with a return of vomiting and a pinched look about the mouth.

Diagnosis: Appendicitis with rupture.

Treatment: Incision through right rectus showed a small amount of pus coming up through the folds of the great omentum which had tried to wrap itself about the appendix. The

tip of the appendix was free and towards the general cavity. It was gangrenous in three spots and contained several concretions. Iodine and alcohol mixture was poured generously into the cavity and the appendix excised. Drainage by tubes. Recovery was uneventful.

Case 6.—Hattie W., female, colored, age 18. Seen with Dr. F. P. Thomas, of Hopkinsville, Ky. History of an ovarian trouble for two or three years and a present attack simulating an appendicitis.

Diagnosis: Ovaritis with appendicitis.

Treatment: Incision showed an appendix kinked on itself with numerous dense bands of adhesions. This was removed. The ovary was found to be in the center of a mass, which, when investigated, proved to be an abscess. This cavity was mopped free of pus, poured full of iodine and alcohol, the tube and ovary removed. Drainage by rubber tubes. The convalescence was prompt and afebrile.

Case 7.—Emma B., negro, female, age 45. Seen with Dr. Austin Bell, of Hopkinsville, Ky. The history was of an appendiceal abscess of six days' duration.

Diagnosis: Appendiceal abscess.

Treatment: Abdomen opened through right rectus. Large abscess immediately beneath incision. This was drained, mopped clear of pus and filled with the iodine solution. The appendix was so bound and obliterated that it was not sought for, the abdomen being closed with tube drains. A safe, afebrile recovery was made.

Case 8.—Will Quarles, colored, male, age 35. Seen with Dr. Haynes, of Howell, Ky.

Diagnosis: Pistol shot wound of the abdomen.

Treatment: Abdomen opened and twenty-five perforations closed, the injury having been sustained twenty-four hours before operation. The abdomen was poured full of the iodine and alcohol solution, three tube drains inserted and closed. The Fowler position was maintained and a Murphy drip. He recovered from the immediate operation and got along nicely for two days with but little fever and a pulse rate around 110, when on the morning of the third day he sank suddenly and died in two or three hours.

Dr. Crisler and Dr. Johnson are able men and need no defense, but I am happy to bear testimony even in so brief a number of cases, to the fact that the method is harmless, and I believe a most valuable one in handling suppurative conditions in the general peritoneal cavity.

## THE ELIMINATION OF THE PREVENTABLE SEVEN PER CENT MORTALITY IN THE SURGICAL TREATMENT OF ACUTE ABDOMINAL DISEASES.

By F. G. Du Bose, M.D., F.A.C.S.,
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It must be apparent to every surgeon that the greatest drawback to success is the advanced progress that operable conditions have reached before relief from surgery is sought. It seems paradoxical or contradictory that this is true, more especially of acute (rather than of chronic) abdominal diseases.

We may as well be honest with ourselves and admit that in these sudden, acute and distressing conditions the fault is from failure to recognize in the beginning the hidden and unseen pathology, and to appreciate its tragic progress; to realize how in a few hours the stage of safety is passed and the domain of gravest danger and doubtful prognosis is reached. The symptom complex is not always prognostic of the underlying pathology. No one has the diagnostic acumen that differentiates between a process walled off by adhesions and one flooding the general peritoneal cavity with infective material without one protective adhesion to limit the spread.

There is another potent cause for harm besides faulty diagnosis, scarcely less damaging in its result. It is the teaching of "masterly inactivity," while nature in the physiological era of surgery is marshalling its army of opsonins, of increasing leucocytes while the disturbed vaso-motors of the splanchinic area are recovering from the shock produced by the sudden escape into the peritoneum of bacteria, blood or feces.

The Fowler position, the Murphy drip, the hypodermic, or intravenous infusion of dextrose, the ice bag, the hot water bottle, all have a merited place in the treatment of these

acute conditions, but only after the operation and never before the living pathology has had surgical care, if possible.

The text-books, most of them, should be rewritten; nearly all over two years old destroyed; a rigid censorship established for all before they go to the press and obsolete methods expurgated. There should be taught and written the cardinal and imperative indications for immediate operations in all acute conditions of the abdomen; drilled alike into the minds of surgeons and internists and make them responsible to the state and to the often victimized sufferer or his family who has been bereft.

There is a symptom complex which means laporotomy; as distinct an indication for immediate opening of the abdomen as is the administration of quinine for malaria and mercury for syphilis. The differential diagnosis if not immediately clear is not to be weighed in the balance when the urgent need of surgical intervention is apparent. The more complex the condition the more urgent the exploration and application of the well-defined surgical principle of removing the cause and drainage when necessary.

The acute abdominal diseases may be reduced to the simple classification in the beginning of the process, of inflammatory and non-inflammatory. The early picture complex is very similar. Their differentiation before operation is unimportant if the time element is a factor. The call for help is a ringing one; sudden onset; chill or fainting; sharp, agonizing pain; colicky in character; rigidity of muscle over the underlying pathology; expression of shock; pallor; nausea, often vomiting; compressible pulse, frequently slow; cold extremities; restlessness; flexed limbs. A few hours after, more rigidity, continued nausea and vomiting, quickened pulse, elevated temperature, recurrent or continued abdominal pain, hyperesthesia of skin of abdomen, increasing abdominal distension, or excessive muscular rigidity with retraction of the abdomen, anxious expression of the face, a flush of red through a sallow skin texture, constipation, ineffectual enemata after first clearing out of rectal contents; vaso-motor paresis is beginning, and the line between dangerous if not criminal delay and timely surgical intervention is at hand if not already passed. If a leucocyte count was taken at the onset, another later will show beginning leucocytosis with probable increase in polymorphonuclear cells. We have been taught and are still taught that operation is safe any time within the first twenty-four hours after the onset. We are not sufficiently impressed with the fact that the danger increases with each passing hour and that the twenty-four hour limit is arbitrary and inapplicable in so many instances that it should find its place among the many obsolete rules of surgical endeavor, living only as a memory of a past period, certainly not a rule to guide us now in the treatment of perforation, strangulation, or any infection of the peritoneum. If surgical intervention is indicated, the necessity is now for performance.

A glance at statistics carefully compiled now and then by some unsatisfied seeker after the truth is a rude awakening to the facts in surgical work.

(*Progressive Medicine,* December, 1913.) Petren summary of investigation in his and one other in clinic is as follows:

8.1 per cent mortality in 759 operations for acute abdominal infections.

6.1 per cent mortality in 759 operations for acute abdominal diseases other than infections.

4.4 per cent mortality in 1,285 operations for infections outside of abdomen.

1.3 per cent mortality in 4,863 operations for non-malignant chronic diseases.

The showing made by him in acute abdominal diseases, giving a mortality of 7.1 per cent, proved that the principle cause in this relatively high mortality was the advanced stage of the abdominal disease when submitted for operation, that anaesthesia shock, the complication of general diseases, the low-

ered vitality and asepsy technique were not appreciable factors.

Annals of Surgery, May, 1913, Vol. 62, No. 5, page 718.

Beckman's tabulation of 5,835 patients, with 113 deaths, a mortality of 4.9 per cent, in the Mayo clinic for 1912, shows substantially the same facts as those of Petren.

It also appears from the above that we are premature in considering "the saving the hundredth man" in discussing measures for this end. We then presume that we have saved the ninety-nine. Unhappily, we have not reached that degree of efficiency; universal statistics contradict it. We have 5 per cent to save instead of 1 per cent. It also appears that the deficiency arises not from the method of doing, but from the time of doing. It comes from the lack of early recognition and from errors of judgment as to the relative safety of operating in the presence of acute inflammations within the abdomen before nature has had an unaided chance to win or fail; before masterly inactivity is enthroned and dethroned; before the blood stream is polluted with toxins and had struggled to raise its opsonic index; before plastic lymph encloses pus foci at the site of trauma and other sites; before the lymph channel is deluged with toxins and living bacteria; before the patient is overwhelmed with shock and toxaemia, and death is in the saddle riding apace with the passing hour.

I would not go on record as minimizing and depreciating the painstaking and exhaustive study of any case, however tragic, but insist that cool judgment quickly grasps the situation, realizes the tragedy and immediately remedies it. Nor would I countenance the rashness that permits an abdominal section in the presence of an undiagnosed lobar pneumonia, nor such carelessness that overlooks an infected kidney, both giving acute abdominal pain with muscular rigidity, fever, quick pulse, and a high leucocyte count. The careful percussion and auscultation of the chest on the one hand, and the microscopical and cultural examination of the urine together with cystoscopy on the other hand will quickly and clearly differentiate the conditions. We should obtain the clinical history, study the details of each individual case, exhaust all known methods of diagnosis and differentiation that are quick in the light that they give, and without delay dispel the doubt and difficulties by a free abdominal incision over the suspected area, and save the 7 per cent that procrastinating, doubting deliberation is allowing to die while a perfected diagnosis is being made, or while a "fanatic faith wedded fast to a dear delusion" that opsonins complements, amboceptors, and the biological laboratory within the patient himself is all-powerful to convert a perforation into a pus pocket; to encyst and absorb a tumor grangrenous from a twisted pedicle; or to short circuit an intestine obstructed by constricting bands, or to wait until bleeding has so lowered the blood pressure that a clot plugs the torn vessel in a ruptured ectopic gestation. Masterly inactivity, this is its picture, and an unnecessary 7 per cent mortality its legend.

## CONCLUSIONS.

1. There is a preventable death rate of approximately 7 per cent in acute abdominal diseases.

2. To overcome this a diagnosis of at least the presence of an acute abdominal disease must be made at the first visit or less than twelve hours after its onset.

3. To appreciate that early operation is the safest of all treatment. That the measures advised by the advocates of masterly inactivity are never safe, are a last resort, to be used only on those unreasoning people who refuse surgery, or on those who are seen late in the disease, and on these only until they can be brought to a hospital and had operative relief.

4. To stop teaching and reporting statistics of cases treated by the expectant plans without paralleling such records with those in which immediate diagnosis and prompt sur-

gical operations are done and a comparison of results in each series.

5. To encourage a more intimate relation with the internist and have him witness operations and there study the living pathology.

6. To let surgeons and internists appreciate the fact that the symptoms are not always in direct ratio to the severity of the unseen pathological process.

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## APPENDICEAL ABSCESS—A CLINICAL STUDY.*

By J. L. Campbell, M.D.,
Professor of Surgical Anatomy and Clinical Surgery, Atlanta Medical College; Surgeon to Wesley Memorial Hospital, Atlanta, Ga.

When we consider the voluminous literature on appendicitis we are surprised that so little is said of appendiceal abscesses. Yet the records of three of our leading local institutions show that 16.7 per cent of all cases operated on are for abscess, with a mortality in the Grady Hospital as high as 22.85 per cent.

The chief cause of this large number of appendiceal abscesses is delay in operation, or an endeavor on the part of the attending physician to use the so-called conservative treatment. The death rate in acute cases operated on early is about 1 per cent. In the three institutions quoted above we find that during a period of five years there were fifty-eight operations for acute appendicitis at Grady Hospital, with one death; at Elkin-Goldsmith Sanitarium, during six years, eighteen cases with no deaths; at Wesley Memorial Hospital for two years, sixteen cases with no deaths—a total of ninety-two with one death. It is not always possible to secure an operation, for in the country districts proper facilities are not at hand, and sometimes, when an operation is advised the patient prefers to take the risk, rather than submit to surgical interference.

When an infection of sufficient virulency passes through the appendix, either with or without a rupture, the omentum and intestines immediately begin forming a wall around it, which varies in thickness and strength according to the patient's resistance and the virulence of the infection. In a small number of cases an abscess may form within the appendix and reach considerable size without a rupture.

An appendiceal abscess may occupy any part of the abdominal cavity; be either intraperitoneal or extraperitoneal—retrocecal, according to the position of the appendix. In twenty-seven cadavers recently examined at the Atlanta Medical College, two, or 7.4 per cent, were found retrocecal.* The constitutional symptoms are much more severe in retrocecal abscesses, and, as shown by Jabez N. Jackson (*Journal American Medical Association,* April 26, 1913), the pus may burrow entirely across the body, or by septic emboli set up either a liver, subphrenic or pulmonary infection. The writer has also observed some of these conditions.

The symptoms at the onset do not differ from those of an appendicitis which terminates by resolution, and one should never express an opinion as to the outcome of a case. When the acute symptoms subside but do not entirely disappear for several days, it is safe to presume that there is pus, even though the temperature and pulse do not vary greatly from the normal. In the majority of cases a mass, which is the point of greatest tenderness, can be made out or the rigidity of the muscles of the right side will continue. The leukocyte count varies, but the differential will in the majority of cases show above 75 per cent polymorphonuclears. In some cases the severe symptoms continue until relieved by operation.

The most serious complications of appendiceal abscesses are intestinal obstruction,

*Read before Fulton County (Ga.), Medical Society, Atlanta, April, 1914.

*Report from Dr. Papes, Professor of Anatomy.

metastasic abscess, pneumonia, embolus and general peritonitis.

The greatest difficulty experienced in making a diagnosis is in mild cases with low leukocyte count and where the abscess is small. Typhoid fever is the most frequent mistake. A malignant growth may be mistaken for an abscess.

As soon as possible after making a diagnosis of abscess a free incision should be made over the most prominent portion of the mass. If the abscess is adherent to the abdominal wall little difficulty and danger is experienced, but where it is not, great care must be exercised to prevent the pus escaping into the general peritoneal cavity. If the appendix can be easily found it should be removed, but the general cavity should never be invaded in an effort to remove it, for it is far better to do a second operation than to run the risk of general peritonitis. Free drainage is the most important factor in the treatment and where any doubt exists make a counter opening in the flank and insert a tube.

Position is very important in the post-operative treatment. As soon as the patients have sufficiently reacted they should be placed in the Fowler position and if there is a large quantity of pus, turned a little to one side. Hot, moist dressings, changed as aften as soiled, do much good.

Patients should have all the rest possible, and the stomach kept empty until nausea subsides. Cracked ice can be given to allay thirst. Small quantities of morphine combined with atropin and eserine have proven beneficial. The eserine increases the peristalsis and aids the cathartic, which can be given on the second or third day. I do not believe in proctoclysis except in severe cases, but a high saline enema of from one-half to one pint may be given every six or eight hours for the first two or three days unless the rectum becomes irritated. Irrigating the wound, or injecting solutions or medicine of any kind should be strongly condemned. The drainage should remain for several days; when removed, insert a small piece of gauze or a small tube. Never pack, for the moist dressings will do all that is necessary.

In the records of twenty-four abscess cases on which I have operated there were fourteen males and ten females, with ages varying from 10 to 45 years. There were three patients between the ages of 10 and 15 years; six between 15 and 25; eleven between 25 and 35, and four between 35 and 45. Five of this series were negroes—one male and four females.

There were six retrocecal abscesses—four males and two females. The youngest of these was a boy about 17, the oldest a woman of 45, and in all except one the abscess was entirely retrocecal.

In one case the abscess pointed posteriorly just above the crest of the ileum in the region of Petit's triangle, and contained a fecal concretion the size of a pea. In four the pus was dark brown or bloody; in two a quantity of gas bubbled up when the opening was made. The appendix was wiped out of the abscess cavity in one case. Peritonitis was present in only one and that was limited to the outer side of the cecum. A cast the size of one's thumb and four or five inches long was removed on the third day from a counter opening in the flank of another.

Two were in the first attack; one had suffered with tenderness at McBurney's point and pain radiating to the left hypochrondriac region for several years. This patient had been treated for a long time for indigestion and hyperacidity. Two had chronic appendicitis, while one had had numerous attacks especially when pregnant.

In four the symptoms of the present attack had lasted less than two weeks; one had been sick only four days, but suffered such intense pain that it required repeated doses of morphine to relieve her; two had been sick for about three months, growing better and worse by turns. The onset of the present attack had been sudden and severe in four, less severe in two, while one had grown better for ten days

just previous to admission, but came on account of the swelling just above the ileum.

In four operation was advised at once, as the symptoms seemed urgent. In one it was delayed to make sure of the diagnosis; in the other to clear up a kidney complication which seemed to contraindicate immediate operation. Three of the six cases died; one on the second day from pulmonary embolus; one developed paralytic ileus, which was relieved by enterostomy, but later had an embolus of the left popliteal artery and died of exhaustion fourteen days after opening the abscess. The third had a pneumonia develop on the second day and died two days later. One had numerous abscesses in the cellular tissue behind the cecum which continued to drain for several weeks. This patient is now well, but has a large hernia. Another case was six months pregnant when the abscess was opened; she made an uneventful recovery and was delivered of a healthy child at full term.

In this series there were eighteen intraperitoneal abscesses—fourteen whites, ten males and four females; four negroes, three females and one male. In thirteen the abscess was in the right iliac region; in four, one male and three females, in the pelvis, and in one to the outer side of the ascending colon about halfway between McBurney's point and the margin of the liver. In all of these the pus was walled in. Thirteen had become adherent to the anterior abdominal wall. In the remaining five one abscess, about the size of a small hen's egg, was within the appendix, which was entirely surrounded by the omentum and free from all other adhesions. Two were within folds of the intestines and two small ones were walled in beside a ruptured appendix. The quantity of pus varied greatly. In two not more than a drachm was present; in three there was as much as a quart. The pus was yellow or cream-colored and foul smelling in all. In fourteen there was a distinct mass, which varied greatly in tenderness and in the remainder the abscess was small or the distention too great to make out the mass.

The average duration of symptoms was about two weeks. Fourteen were in the first attack; three had suffered with subacute or chronic appendicitis and one had a history of several previous attacks. In ten the onset was severe, and the symptoms continued up to the time of operation. In eight the symptoms abated as the pus was walled off and the patient could walk about with some degree of comfort. The lowest leukocyte count was 8,000 in a patient whose symptoms had been mild; the highest 22,600 in a boy of eleven years, who also had a rather mild attack. The average was 13,900.

The treatment in all cases was essentially as outlined above.

There was one death, the result of general peritonitis with multiple abscesses all through the abdominal cavity. Two had hernias at the site of drainage. I have since operated on these patients; one eighteen months after recovery from the abscess and one in about six weeks, owing to an attack of violent pain in the abdomen. The appendix was found in both cases. One patient had intestinal obstruction about thirty days after the abscess was opened, but recovered promptly after operation. In this patient a fecal fistula, which had persisted during this time, also closed and he has since remained quite well. In two cases there was a persistent fistula at the site of drainage and necessitated opening the wound a second time. My mortality in intraperitoneal cases has been 5.5 per cent, while in retro-cecal abscesses in spite of free drainage, it was 50 per cent; all, however, due to complications. In thirty-five cases treated at Grady Hospital during a period of four years there were eight deaths, in three of which there was general peritonitis; the reports do not state the position of the abscess. (Reports of 1905-10-11-12.)

## CONCLUSIONS.

1. The severity of the onset and early symptoms are not a guide to the final outcome of the case, and every patient should be advised

to submit to an operation as soon as the diagnosis of appendicitis can be made, for then the mortality will not exceed 1 per cent.

2. Retro-cecal abscesses are much more fatal than intra-peritoneal, and should be thoroughly drained through a large counter opening; in fact, free drainage is the keynote in all cases.

3. I am thoroughly convinced that too much treatment does more harm than good. The fistula will close sooner and there is less danger of complications where the patient is put in the Fowler's position and allowed to rest, than when something is being done all the time.

4. Warm, moist dressings in bad cases relieve the discomfort from distention, facilitate drainage, and hasten resolution of the abscess, and if the drainage is from the most dependent point there will be no need of irrigation.

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## THE IODINE TECHNIC IN SURGERY.*

By W. H. Wilder, M.D., F.A.C.S.,
Birmingham, Ala.

There has been so much written during the past few years on the uses of iodine in surgery that I hesitate to bring the subject before this association, especially as I have nothing new to offer; but the manner in which I apply it is so simple, so economical, so universally applicable and so satisfactory, I am sure a brief discussion of it will not be out of place at this time.

Nor do I claim any originality for it, as it was gotten by me from a paper published by Dr. E. H. Beckman of the Mayo Clinic in 1911; he gives to Dr. Bastianelli of Rome proper credit for having originated this technic.

It is no longer confined to Italy, but is now in general use in many of the large clinics in Germany, and is also quite extensively used in America.

It was first brought forth as a method for preparing the skin for surgical operations, but has proven so satisfactory to me I now use it almost universally in first attention to abrasions, lacerations, and other freshly made wounds.

Two solutions are necessary—solution No. 1 is made of one part of iodine crystals to 1,000 parts of benzin; solution No. 2 is made of equal parts of grain alcohol and U. S. P. tincture of iodine, which has been freshly prepared. These solutions are kept on hand in the office and in the hospital and are constantly carried in my grip and used both in emergency and elective surgical work.

When a patient is seen with a contused and lacerated wound, no soap nor water whatever is used in cleansing it, but recognizing the fact that the less we disturb the wound the better chance nature will have to repair the damage done, it is cleansed of all dirt and grease first by applying solution No. 1 with a piece of sterile gauze on forceps; after the parts have been given a few minutes to dry solution No. 2 is applied in like manner and the wound dressed with plain dry sterile gauze. This dressing is allowed to remain about forty-eight hours, and generally when removed the wound is found to be clean, and usually heals without pus.

Great care should be taken to see that the skin is dry before applying these solutions, and when necessary to shave hair from the area of the wound, this should be done *dry* or by applying benzine, alcohol or ether, as they will evaporate rapidly. *Do not use soap and water.*

The principal objection urged to the use of iodine in fresh wounds is the pain it causes; this is of shorter duration and not more severe than that caused by the use of the brush or gauze with soap and water; then, too, it is a far better germicide than bichloride of mercury, phenol, and other corrosives, and aids

*Read before Medical Association of the State of Alabama, Montgomery, April, 1914.

nature in throwing out her defensive army of phagocytes.

It is needless to say that the injured parts should be so bandaged as to give them as near perfect rest as possible—splints being used when necessary.

I have found the iodine technic especially valuable in the treatment of compound fractures. Solution No. 1 is freely applied first to the outside and then inside the wound and dried off; then solution No. 2 is applied in like manner, taking great care to disturb the parts as little as possible, and to keep the fingers out of the wound, applying the solution with sterile gauze on sterile forceps and removing only loose pieces of bone with sterile instruments. After this the limb is put in whatever kind of splint that is best suited to the particular case; ordinarily I prefer plaster of Paris reinforced with thin wooden slats worked into the cast so as to strengthen it, and with proper windows cut, so as to allow for future dressings.

In these cases the solutions should be used rather freely so as to penetrate every part of the wound. Recently I have treated three compound fractures of both tibia and fibula in this manner and have gotten primary union of the soft parts in all of them. In operations about the eye and the internal ear these solutions should not be used, because of the severe pain caused by their getting into them. This method of preparing the skin over the nates, perineum and external genitals in obstetric work has been found very satisfactory.

In elective surgery where there is plenty of time to prepare the patient I prefer to have the field of operation shaved with soap and water the evening before, and a bichloride dressing applied; when the patient comes to the operating room next morning solutions Nos. 1 and 2 are applied very carefully as above described, great care being taken not to allow them to run down on the scrotum, in the groin, or other places where they dry very slowly and cause blisters. One application each of these solutions is generally found to be sufficient; however, some surgeons make two applications of solution No. 2, and some substitute pure grain alcohol for this second application of the latter solution. In this latter method we have the advantage of the almost complete removal of the iodine discoloration of the skin, as well as the additional germicidal effect of the alcohol.

From the standpoint of the laboratory man as well as that of the surgeon this technic has not proven absolutely perfect, and we have many varying opinions from both. Harrington's solution and bichloride of mercury are preferred by Tinker and Prince, who have invariably gotten positive cultures after the use of the iodine technic; however, in Surgery, Gynecology and Obstetrics, Vol. 12, page 530, they say:

> "It is possible that iodine has additional values besides its antiseptic values, in that it is an active counter irritant and that the increase of flow of blood to the region of operation, with also increase in number of leucocytes present, would favor wound healing."

On the other hand, Bovee, in the same journal, Vol. 13, page 94, in summing up his observations and experiments says in part:

> "Tincture of iodine diluted with an equal amount of absolute alcohol may be considered reliable as a local application in preparation of the skin or mucosa in any part of the body. Dilutions of less strength are unreliable if hairs or large hair follicles are in the field of operation."

In his excellent article on "The Practical Application of Military First Aid in Railway Surgery," Captain Leon C. Garcia, Medical Corps U. S. Army, published in the *Journal of the American Medical Association*, January 21, 1914, describes very graphically the wreck which took place on October 19, 1913, when a Mobile & Ohio train bearing 177 officers and men plunged through a trestle over Rube Burrows Creek near Buckatanna, Miss., carrying three cars and the structure to the ground thirty-five feet below, and killing seventeen

and injuring more or less all the others. As to the method of dressing these wounds, he says:

"All lacerated, punctured or incised wounds and all abrasions of the tissues were painted with tincture of iodine."

**"In over ninety cases of open wounds there was only one infected.** This infection occurred in a case of compound fracture of the lower third of both tibia and fibula, in which the leg was pinned under the wreckage for six hours in such a position that an occlusive dressing could not be applied. This also was the only injury in which amputation was required.

"A large number of severe lacerated wounds of the scalp were painted with tincture of iodine and stitched up. I subsequently washed dried blood, dirt and cinders from the scalp, and found in all cases a wound healing by primary union."

In summing up the further interesting points in the method of treating the wounds received in this wreck, Garcia says:

"It shows the high efficiency of the hospital corps men in emergency work and the remarkable results obtained by the intelligent application of the first aid dressing and the free use of tinctures of iodine in open wounds of any character."

I am fully aware, Mr. President, that in the iodine technic as above described we have not reached perfection, and that there is a diversity of opinion on antiseptic technic, as well as most other surgical subjects, and that it is only by careful study, observation and discussion of these matters that we may be enabled to arrive at the best methods of procedure.

No more appropriate words for closing this paper can be found than those of Beckman above referred to, when he says concerning this technic used at the Mayo clinic:

"We have found this method of preparing the skin suitable for all classes of cases. The only type of case in which we do not use it is in exophthalmic goitre, where it is contra-indicated on account of the iodine. It is simple, easy to apply, inexpensive, and so far as antisepsis is concerned, as efficient as any method we have ever tried."

1224 Glenview Road.

# REPORT OF A CASE OF SUB-TEMPORAL DECOMPRESSION FOR RELIEF OF INTRA-CRANIAL PRESSURE OF OBSCURE ORIGIN: RECOVERY.*

By George T. Tyler, Jr., M.D.,
Greenville, S. C.

Patient A. B., age 14, white, male.

Complaint: Paralysis of right side of body; bed-ridden; loss of vision and speech; partial loss of bladder and rectal control.

Duration: Four to five months.

F. H.—No history of syphilis or other hereditary trouble elicited. Other members of the family are apparently healthy. Father denies any venereal contagion, even exposure.

P. H.—During his second summer the patient had diarrhoea and was very ill. From this he recovered and was in good health until five years ago (1908). Then he lost the use of his arms and legs. He was in bed for three months. His hands assumed the prehensile form. He recovered from this attack and later was robust. In September, 1910, he limped with the left foot, and later lost the use of the left arm. This one-sided paralysis he gradually recovered from. He was not confined to bed, but during the illness walked about. In the same autumn he passed a bladder calculus and had a left-sided pneumonia. His recovery from these were uneventful, and he remained in good health until the spring of 1913. At this time the present illness began. He is very bright, high-tempered; has worked in a mill and played with the other boys in his community. He is right-handed.

P. I.—In April, 1913, the patient complained of defective vision. He saw "double," and had occasional vomiting attacks which were not associated with eating. He was seen by Dr. E. W. Carpenter, whose report of his eye-examination is appended. Because of the condition of his eyes, surgical intervention was advised at this time. The condition gradually became worse. He remained in bed the greater portion of the time, lost appetite, then the use of the right arm and leg, and later, speech. He became unable to express his wants, soiled the bed-clothes, then had entire loss of bladder and sphincter control. Vision also failed. Finally he became bed-ridden, and was in this condition when seen.

*Read before Tri-State Medical Association (Virginia, North Carolina, South Carolina), Wilmington, N. C., February, 1914.

P. E.—Patient in bed. Right arm flexed at elbow; is partially paralyzed; right leg is in same condition; right foot held in plantar flexion owing to contraction of tendo Archilles. Hearing apparently normal; ears normal. Eyes: motion of eyes normal; pupils react to light and accommodation; eyelids normal in motion; no ptosis. Slight paralysis of right side of face. Tongue protruded in mid-line. Mentality below normal, though to what extent it is difficult to say, for patient cannot speak. He makes gutteral sounds. Heart and lungs, abdomen and back normal. Left arm and leg normal. Reflexes: jaw jerk not increased; cremaster present on left side, absent on right; knee jerks markedly exaggerated, as is also Babinski. Sensation seems to be about normal on left side; is somewhat delayed on right. There is atrophy of muscles of right arm and leg. Hand and foot on this side sweat easily. Lumbar puncture: fluid clear, escapes under much pressure. It was allowed to come away until pressure seemed normal. Patient was not affected by procedure.

Patient seen one week later. Second lumbar puncture: 30 c.c. allowed to escape. Wassermann negative, no elevation of temperature, normal cytological count in spinal fluid. Patient totally blind.

REPORT OF DR. E. W. CARPENTER, who examined the patient:

O. D.—Blind.

O. S.—Six-ninths.

Pupils: O. D.—Reacts to indirect light only; immobile to direct. O. S.—Reacts to direct and indirect light.

Fundi: O. D.—Media clear; disc slightly blurred; margins very blurred, veins normal; arteries pale; pulse 62; temperature 99.

April 23, 1913, right facial palsy; tongue to right; soft palate sluggish.

O. D.—Blind.

O. S.—Dim light-perception only.

Pupils, O. S.: Reacts to direct light only, and is sluggish.

Fundi: Disc O. D. Swollen 2 m. m. Disc O. S. Blurred.

Operation, July 29, 1913. Exploratory craniotomy: left-sided sub-temporal decompression: ether anesthesia. Opening about two and one-half inches in diameter; dura tense; on incising it fluid came away under tension. Opening enlarges until temporal lobe, fissures of Rolando and Sylvius could be seen. Director was introduced for one and one-half inches beyond edges of opening in bone. Membranes normal in color and appearance; no adhesions; brain not tense nor soft; no sign of anything abnormal. Trochar into ventricle—no fluid appeared. Edges of bone bled freely. Attempt was made to check this by using bits of muscle; but since this was not effectual, I compressed the tables of bone with rongeurs, obliterating the diploe. This checked the oozing completely. Dura snipped away to within one-fourth inch of edges of opening in skull. The temporal muscle was then sutured, the skin replaced, using interrupted sutures. Patient put to bed, lying on right side.

There seemed to be no evidence of closure of foramen of Magendie. When fluid was released, the brain receded from the skull without difficulty. No evidence of brain tumor was present, at least not on the surface.

Post-operative History: After a stormy convalescence, some improvement was immediately noticed. He uttered a few words, could understand, and could move right hand and foot slightly.

Note by oculist after operation.—August 1, 1913: Eye-grounds O. D.; media clear; disc flat; edema absent; color, moderately steel-gray; veins and arteries smaller than normal.

O. S. Media clear; disc shows small amount of edema; edge blurred all around; veins and arteries slightly smaller than normal.

Pupils: O. D. reacts moderately to indirect light, not to direct. O. S. reacts to direct but not to indirect light. Patient appears to have some vision, probably in O. S.

August 5, 1913.—Pupils: O. D. reaction to direct light, prompt and full; to indirect, fairly prompt; excursion of pupil moderate. O. S. reaction to direct light absent, to indirect slight.

Disc: O. D. color, steel-gray, perhaps a trifle whiter than formerly. O. S. slightly raised and blurred; vision in O. S. Patient recognizes persons at foot of bed.

August 20, 1913.—Mentality better. Patient offered hand in greeting. When asked to put out as many fingers as held before him, he did so accurately. Bowels move daily, most frequently in a.m. He has control. He is learning to walk. There is bulging through trephine opening. Lumbar puncture: fluid rose in small rubber tube 18 cm. Slight pressure over bulging area caused it to recede and a depression existed where it had formerly bulged. This depression persisted after needle was withdrawn. Patient was not affected by the puncture. He was helped up, and with assistance, walked.

Question: Is this fluid secreted in the ventricles and by bulging of brain into opening prevented from being absorbed by lymphatics

of the temporal muscles? By withdrawing fluid from below, the brain can fall away from the skull. Is there a malignant process? From the fact that the brain receded so readily, I am inclined to think that communication between the ventricles and the subdural space is free. Perhaps this relief of pressure from within may produce a "negative pressure" from the extra-cranial lymphatics, and the fluid may be taken up by them more readily.

September 2, 1913. Head almost symmetrical; no bulging through opening in skull.

October 16, 1913. Patient walks without support. He can see with his right eye. Pupils react directly and consensually. Mother says this is the fourth time he has learned to walk. Lumbar puncture: only small amount of fluid withdrawn. Wassermann negative.

December 11, 1913. Small abscesses, one in center of skin flap, another behind ear opening. From the upper came stitch used in closing muscle at operation. He had vision in both eyes. Can walk with ease, taking steps of equal length and bearing full weight on right foot, which he holds now, entirely on the ground. Speech not yet returned.

January 30, 1914. Still gradually improved. Intelligence increasing. Hand (right) recovers power slowly.

In commenting upon this case, I wish to speak of four items which seem to me to be important.

Diagnosis—I do not know what the condition is. If any one here can enlighten me, I shall be glad. The nature of these three attacks I take to be the manifestations of the same process, and this is most likely an infection. But in the absence of any pathological findings except increased intra-cranial tension caused by excessive fluid, I do not know what the infective agent is. Hydrocephalus, internal, or external, more probably was present, but that sheds little light on the cause. Brain tumor of benign, or malignant origin, must be considered. But how this could cause all these symptoms I do not know. I am inclined to think that the cause is a sclerosing process induced by some toxin, which has cleared up, only to recur again. The present lesion is, I think, in the internal capsule on the left side.

II. The Result—We operated only to relieve symptoms. In calling this a recovery I do not mean that the patient is restored to normal; but since he has recovered his sight, is again able to walk, has sphincter and bladder control, I think we can call it a recovery. I still hope he may regain speech.

III. To check hemorrhage from the diploe I compressed the two tables of bone with rongeurs, obliterating these venous spaces. This proved efficacious where bits of muscles could not accomplish it—not a new procedure, but one I think it well to mention.

IV. I wish to urge a more frequent use of lumbar puncture as a diagnostic, as well as a therapeutic measure. It is simple, harmless, and gives information almost absolutely necessary in cases of this kind. Since we are growing more familiar with spinal anesthesia and intra-dural injections of serums, it is well to hope that its wider use may be employed. Certainly in this case I regard its use both before and after operation as indispensable.

Subsequent Note, May 16, 1914.—Patient called. He got out of a wagon unassisted, walked up steps and shook hands, using the right hand, though awkwardly. He has grown and looks well. In attempting to remove shirt he had associated movements of right hand and foot; also of tongue. He can place right foot square on the ground, though he bears less weight on it than on the left. Babinski reflex cannot be gotten. Plaubar reflex normal. Knee jerks are exaggerated. He can utter a few words and can extend the right arm a great deal more than when last seen. He uses the right hand only a little; fingers of this hand are held stiff. He can flex them by using the other hand. His father thinks he masturbates. His temper is violent; his mother is in fear of being attacked by him if he is thwarted in anything. His father keeps him under close observation.

# COMPLICATIONS OF THE SUBMUCOUS RESECTION OF THE SEPTUM OF THE NOSE.*

By W. Likely Simpson, M.D.,
Memphis, Tenn.

The submucous resection of the septum is an operation which has been pretty generally practiced by rhinologists for about eight or nine years, and it seems to me that it is probably not amiss to bring before this section of the Southern Medical Association the complications arising in this oft-performed procedure.

In this short paper I shall not try to cover every complication that might arise in doing the submucous, but shall try and bring before you for your consideration and discussion some of the more important ones.

## BLEEDING.

Bleeding at the time of operation has occasionally been of considerable inconvenience. Occasionally bleeding of the mucous membrane has not been very well controlled by the use of cocaine and adrenalin, but as a general thing bleeding at the time of operation has been from the larger vessels in the bone at the base of the septum, and has been best controlled by packing with gauze saturated in cocaine and adrenalin, or at the time saturated with hydrogen peroxide. Usually after packing with gauze as stated above for fifteen or thirty seconds the operation can be finished, but at times no little trouble is encountered. Bleeding after the packing has been placed in the nose is usually of little importance. If the bleeding keeps up after packing the use of adrenalin and cocaine is usually sufficient. I have never repacked a nose to stop bleeding after the submucous. It seems to me that those operators who do not use packing of any sort would have considerable trouble at times.

## HEMATOMA.

The formation of a hematoma is not an unusual event in submucous work. It seems to me there are several reasons why hematomas appear in one case and not in another. I believe the extent of the resection has more to do with it than any other one thing. Operators who remove every bit of a deflection will get more hematomas than those only resecting the cartilaginous portion or doing a less radical operation, and a hematoma is rarely seen after resection of only a part of the cartilage. The older the patient the more liable there is to be a formation of a hematoma. The longer the packing is left in the nose the less liable to formation of hematoma. The more tearing of the mucous membrane the less liable to hematoma. The Freer incision would give better drainage than the Hajek or Killian and would be better as far as hematomas are considered. Incision in the mucous membrane, if there is considerable tendency to bleed at time of the operation, is to be recommended. Too early blowing of the nose after the operation would at times lead to ballooning of the flaps, and the subsequent formation of a hematoma. If a hematoma has formed, one or two incisions and the removal of the clot of blood is probably the best procedure. Of course if the hematoma is small, at times it will be quite readily absorbed, but if quite large, either opening the original incision or making of one or more incisions will probably be the better procedure. The hematoma prolongs the after treatment somewhat, but as a rule does not mar the final results in the least. Suppuration of a hematoma is not an unfavorable way of ending. Abscess formation is not so uncommon after the submucous resection, especially if the patient is below par in resistance, or has syphilis, etc.

Perforation of the septum after the resection is a complication which is very much to

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be feared, and is a complication which is practically always preventible.

Frequent perforation of the septum is a sign of carelessness or incompetency. If the perforation is low down, and far forward, it is very annoying to the patient, as there would be very much delayed healing, crusting and whistling of air through the aperture, etc. Perforations high up or far posteriorly are little noticed by the patient.

It is far better to stop in the midst of an operation, and operate again later, than to continue an operation, when by so doing, one is almost certain to get a perforation.

The use of sharp elevators, except at the very beginning of lifting up of the mucous membrane, is one reason for some perforations. A blunt elevator as that of Hajek is much to be preferred over sharp ones.

Elevating the cartilage and bone from the perichondrium and periostium instead of the perichondrium and periostium from the cartilage and bone has more to do with the prevention of perforation than any other procedure; or in other words, in elevating the mucous membrane, press quite hard with the blunt elevator against the cartilage and bone in resistant places. At times it may be impossible to get around a sharp ridge with an elevator without perforating, unless the cartilage or bone anterior to the ridge is first removed. If one will remove the deflected cartilage which is to be taken away with the swivel knife practically all in one piece and keep this in warm saline till the remainder of the operation is finished, so that if the mucous membrane is torn badly so that one fears a permanent perforation, then a large piece of cartilage can be placed between the torn flaps and will prevent perforations, which without this step would become permanent ones. If the cartilage is crooked, it can be cut and straightened before being placed between the flaps. The closure of an old perforation is usually a very difficult operation. Transplantation of cartilage from another patient at the time of a submucous operation is probably the best procedure.

### DEFORMITY.

External deformity of the nose should be very rarely seen after the submucous resection. After an abscess formation or perichondritis falling in of the nose may be seen, but usually this can be quite readily corrected by the injection of paraffin. Sagging of the tip of the nose may be seen if the cartilage is too badly displaced, and at the same time the bony septum also, so that to get a correction of the trouble nearly the whole cartilage and bony septum must be removed. Usually the anterior part of the cartilage can be removed and then a portion left, then the part farther posteriorly removed, getting a good result, and at the same time leaving a support to prevent sagging of the tip of the nose. If the cartilage must be removed from the front entirely back to the bony septum one can straighten the removed cartilage, finish the operation and replace the cartilage and thereby prevent sagging of the tip.

Such complications as fainting, cocaine poisoning, etc., can practically always be prevented by having the patient in a recumbent or semi-recumbent position.

Middle ear and accessory sinus troubles are occasionally seen and are prevented usually by early unpacking of the nose.

Throat trouble, meningitis, erysipelas, etc., are rare complications and will not be further mentioned.

Hoping to bring out some discussion which will be of mutual benefit, I present this paper.

930 Exchange Building.

### DISCUSSION.

Octavius Dulaney, Dyersburg, Tenn.: I think Dr. Simpson has covered the complications of sub-mucous resection of the septum of the nose, and we have but a few minutes. The only thing I would like to call especial attention to is the fact we must apprise our patients of the fact they are liable to have a perforation. If you do not, they will never forgive you. You must always be cautious and tell the patients you are liable to have a perforation follow this, even

though you may perform the operation and be successful to a certain extent and think the patient is going to make a thorough recovery. A man should be very careful in performing the operation on a syphilitic patient. I have seen one or two patients who had to be given 606. It seemed they would not have any union at all of the tissue. The old wound became very much involved and was only relieved by 606, and leaving a very serious perforation. That is about the only thing I would like to call your attention to. And another. I always use antipyrine ten grains to the ounce in conjunction with cocaine. I find the effect of the antipyrine will last for an hour. I get splendid results. It seems to act as an anesthetic in conjunction with the cocaine.

R. W. Bledsoe, Covington, Kv.—This is one of the most important operations we do in nasal surgery today. In regard to hemorrhage, it has not been my experience to have severe hemorrhage except in one or two cases, in which there must have been an abnormally large arterial twig along the line of incision. I remember one case in which I got a rather free hemorrhage; it was readily controlled by packing for a few moments and the operation continued.

I disagree with the doctor. Perforations are not always due to carelessness or imperfect technique. There are cases in which the mucous membrane covering the top or point of a spur or very sharp deflection appears to be particularly thin and oftentimes it is very tedious and the utmost care must be exercised in separating it from underlying cartilage or bone. We must dissect gently from before, behind, above and below, and often even then we may get a perforation. I would not condemn a man for making a perforation. I have done it myself. I think it was Dr. Ballinger, of Chicago, that said at our recent meeting at Chattanooga that a man who did not make a perforation either did not do the resection or was handling the truth carelessly. When I first began the sub-mucous resection I would not come within three-eighths of an inch of the bridge of the nose or under-surface of the nasal bones. Gradually I took a little more; now I can go much nearer, and as yet I have seen no case of sagging of the nose. I think we can take out all the cartilage that is causing trouble up to within a quarter of an inch. There have ben a few cases where the results are not perfectly satisfactory to me. Some of my original resections were not what I would like. It was because I did not take out enough. In my experience with the submucous resection, one of the greatest mistakes is, we do not go enough high up in many of the cases. I mentioned in my paper today about a thickened septum without deflection. The cartilage at the conjunction with the perpendicular plate of the ethmoid is frequently a quarter of an inch or more in thickness. When this is not completely removed your results do not turn out as you wish. In other words, you do not have the inspiratory space increased in area, which was your object in the beginning. It is my desire to take out the cartilaginous conjunction with the ethmoid, and as much of the perpendicular plate as I can get hold of. I have often found the perpendicular plate as thin as tissue paper.

The fainting from nervousness or susceptibility to cocaine is a thing we have all to contend with at times. Strange to say, some of the most neurotic patients I have had have behaved much better than I expected. Occasionally I have noticed the depression from cocaine.

Regarding antipyrin, I frequently use it in sinus cases—first shrinking the mucous with cocaine and adrenalin, then spray with a 10 per cent solution of antipyrin, which prolongs the contraction and enocurages drainage of the diseased sinus.

Horace T. Aynsworth, Waco, Texas.—As to the packing, formerly I used ordinary gauze. I have seen it saturated with oils. Recently I have been using a method Good and Ballenger are using—Good's and Bernay's splints. You can remove those almost without any hemorrhage. Another point: Those discussing the case said the longer you allow the packing in the less hemorrhage. Formerly I left it forty-eight hours, now I remove it the next morning. I have not got to the point where I do not put in any packing, but I leave it in but a short time.

About the operative shock: I use the preliminary injection of morphine; it is a physiological antidote of cocaine. I used to add atropine; it increases the headache, so I think it well to leave it out. I never use a knife to go through the cartilage, but use a curette. I think by that method you avoid an anterior perforation. I have had posterior perforations, and I think it was due to the friability of the mucous membrane. I never tell a patient beforehand to expect a perforation. I had hematoma in two cases. I had one depression of the nose. I attribute it to my technique. Take scissors and make your upper section of the cartilage and then you can be absolutely sure of the amount of cartilage left to support the bridge.

Dudley S. Reynolds, Louisville, Ky.—I want to say a word about hemorrhage. In spraying the nasal passages with adrenalin to restrain hemorrhage, after hundreds of operations in the cavity of the nose, I have never been disappointed. Spraying the fluid straight into the nose, into the middle and inferior passages, seems to have no effect. If you spray straight up against the ethmoid, the hemorrhage is promptly controlled. If you have little or much hemorrhage, at the time of the operation, it has no effect upon what may happen in six or eight hours. I tell my patients they may have a profuse hemorrhage in six or eight hours, and teach them to spray straight up in the nose. I use no packing. The free passage of air is the best hemostatic in cases of oozing. You will have a great deal more hemorrhage with a pack in the nose than without any packing at all.

W. Likely Simpson, Memphis, Tenn.—I appreciate very much the discussion. As to Dr. Dudley's statement that he would inform his patient that he might have a perforation, I do not believe it wise. One would only have a perforation in probably one case in twenty-five, and one would scare a good many people away if you told them that you had a perforation now and then. I said in my paper that frequent perforations were due to carelessness or imperfect technique, and still

believe that, that is as mild as I can make it. If one has a perforation in every four or five, there is something wrong. Any one doing this operation in eight or ten minutes is not doing the best for his patient, especially if there is an extensive resection, and I do not believe any one would do that in bad cases.

If there is a perforation on both sides in the mucous membrane opposite each other, then the insertion of a piece of cartilage is probably the only thing which will prevent this condition from becoming permanent.

In my experience the longer we leave the packing the fewer hematomas we are going to have. I never have had a hematoma from pulling the packing out. I do not think the kind of packing I use would ever cause this kind of trouble.

As to spraying with adrenalin, there is no trouble of hemorrhages high up in the nose. As a rule there is no trouble from bleeding from the sub-mucous, except where bone is cut, which is usually at the base, and spraying with adrenalin will do little if any good.

930 *Exchange Building.*

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## EPITHELIOMA FOLLOWING A PTERYGIUM.*

By Robert Fagin, B.A., M.D.,
Associate Professor of Ophthalmology, University of Tennessee.
Memphis, Tenn.

The name pterygium is of Greek origin and means "a little wing." This name, given before the birth of Christ, has remained unchanged throughout all these centuries.

Perhaps no other disease of the conjunctiva has accumulated such an extensive literature as the pterygium. From ancient times surgeons have written about it, have tried to successfully remove it, have discussed its cause, its anatomy and its pathology, but not until near the present time has its true condition been understood. Our present conception of the disease is that advanced by Horner in 1875 and later proved by Fuchs. Namely: That a true pterygium always has its origin in a pinguecula. So, in the light of this knowledge we think of the pterygium, not as a *new* growth, but as an overgrowth, a displacement and a rearrangement of the pinguecular tissue.

The true pterygium begins to develop on the nasal side first. Each eye is usually affected, but not necessarily both eyes at the same time. Later on the temporal sides may be affected, so that the same individual may have *four* pterygia.

### DIAGNOSIS OF A PTERYGIUM.

Its diagnosis is very easy. The conjunctiva at the limbus begins to overlap the edge of the cornea and to attach itself to this structure. This union forms the apex of a triangular mass, and is called the "head" of the pterygium. The old pinguecular now loses its identity and forms the body of the pterygium. The head has a tendency to advance on the cornea toward the center of the pupil and, if left unmolested, may not only reach the center of the pupil but may even extend to the opposite limbus. Chisholm, in 1888, reported three cases, which had completely covered the cornea. Pseudo-pterygium and symblepharon must be differentiated from true pterygium.

### TREATMENT.

The diagnosis having been made, the only treatment is surgical. Either the pterygium must be dissected loose from all its attachments and then entirely removed, or the head of the growth must be removed from the cornea and must be transplanted beneath the undermined conjunctiva. The former is the operation of excision, or extirpation; the latter that of transplantation.

### HISTORY OF THE OPERATIONS.

Celsus, of Rome, in A. D. I., separated the pterygium from the eye with a scalpel and removed the head by a thread passed beneath it. Aetius sawed it from its attachments with a horse-hair. Heister tried to destroy it by

*Read in Section on Ophthalmology, Rhinology, Otology and Larnygology of the Southern Medical Association, seventh annual meeting, Lexington, Ky., Nov. 17-20, 1913.

making an incision down through it, thus hoping to destroy its circulation. Others cut "crosswise," but Acrel, in the seventeenth century, was the first surgeon to advocate and practice complete removal of the head of the growth. Cauterization, scarification and ligation all were used even up to 1850. About this time the elder Desmarres devised a transplantation method for the purpose of diverting the head of the growth from the cornea. His operation was a great step toward the almost perfect one of today, but he left the sclera exposed, which is not considered good surgery now. Knapp, in 1868, made an improvement, but, in 1902, McReynolds, of Dallas, Texas, so revised this transplantation method that it is the nearest perfect of all. McReynolds' operation is practiced and taught in the best eye clinics of America and Europe. Suffice it to say that I feel highly complimented to have him present, and that you shall hear him open the discussion of this paper.

REASONS FOR REMOVING PTERYGIUM.

1. Cosmetic effect. A growth on the eye is very noticeable, even to the laity, and should be removed, if possible.

2. For the relief of chronic conjunctivitis. This growth is always a "tell tale," and loss of sleep, or any dissipation, is followed by redness of the eye.

3. To prevent corneal astigmatism. The pterygium grows toward the pupil and lessens the spherical shape of the external surface of cornea, therefore increasing the astigmatism.

4. To prevent the destruction of vision. Useful vision may be entirely lost by the pterygium growing across the cornea in front of the pupil.

5. Pterygium, after the age of 50, may in some way become irritated and change into a cancerous growth; this would mean total destruction of sight, and, if left alone, it would mean destruction of the eye, together with the orbital contents, and finally, death of the patient.

NATURE OF CANCEROUS GROWTH.

These are always epitheliomas, and begin at the head of the pterygium near the limbus. Da Costa, of Lisbon, reports two cases in which the histological examination showed a distinct epitheliomatous structure. Three similar cases are cited from different observers. Parsons' Pathology of the Eye, Volume I, reports a case of an elderly man, a patient of Snellen, Jr., who had an epithelioma of the cornea, beginning on the head of a pterygium. There have been others, but these are all that I have been able to find in the literature that I have had access to.

My Case: Five years ago, Captain A. J. Rylee, age 65 years, of Tutwiler, Mississippi, consulted me about a growth on the nasal side of his right eye. I explained to him that it should be removed; but he, fearing any operation on the eye, remonstrated, saying that it had been there several years and only occasionally troubled him in any way. I saw him after this perhaps once a year, and each time he planned to have it operated soon, but he had had, during the last few years, two other operations on his face, one for a growth on the side of the nose, and the other on the opposite cheek, just below the eye. So for this reason again he hesitated. Finally, on August 26, 1912, Captain Rylee came into my office with the right eye more irritated than usual. The pterygium seemed to be enlarged and thickened. There was no pain, but the eye was rather uncomfortable. I prescribed antiseptic washes, argyrol, etc., for the inflammation, and throughout September he reported to me about every ten days. By October the condition had steadily grown worse, so that now, with a corneal microscope, one could see numbers of small blood vessels running in all directions over the growth. On October 25th I sent a small section of the growth to Dr. H. T. Brooks for microscopical examination. Two days later the following report came back from the laboratory:

"Pathological Report on Tissue Sent to Laboratory October 25, 1912, by Dr. Fagin.

"Specimen consisted of a piece of tissue removed from a growth at sclero-corneal junction of right eye. **Microscopic Appearance:** Specimen was the size of a small pea, irregular and somewhat flattened. It was soft, succulent, and appeared quite vascular, resembling in this respect

granulation tissue. **Microscopic Appearance:** Epithelial layer was definitely thickened. There was distinct and unmistakable infiltration of the deeper structures with squamous epithelium. Periphery of specimen showed hemorrhage of blood vessels. **Diagnosis:** Epithelioma.

"(Signed) H. T. BROOKS, Pathologist,
University of Tennessee, Pathological Department."

When this report came in the patient at once consented to the enucleation, and although the vision in this eye was still normal, and this had always been his best eye, yet he was willing to discard it in hopes that the disease might be permanently removed. The patient possibly would not have consented so readily but for the fact that this was the third attempt for this kind of a tumor to grow on his face. Both of the other attacks were successfully removed, so he had hopes that this one might be removed also. The first attack was on the nose, and the second on the cheek.

On November 1, 1912, the enucleation was done, and the patient made an uneventful recovery. Two months after we had an artificial eye made for him which would fit the socket without causing any irritation. He has been successfully wearing this eye ever since, and has had no sign of a recurrence up to the present date.

Suite 930 35 Exchange Building.

## DISCUSSION.

S. L. Ledbetter, Birmingham, Ala.—The paper is interesting more or less from the fact that it is an item in history. I do not think we should regard an epithelioma coming once in the course of a lifetime in connection with pterygium or on a pterygium as a part of the pterygium, because we have those growths on other parts of the eye without any apparent cause whatever. Or it might come from a slight injury of the conjunctiva. The fact that it occurs on various parts of the eye would make it possible to come in connection with a pterygium without the pterygium being a direct factor or cause. So I just consider it as incident, an accident or a coincidence, in the fact that the growth developed into a malignant form of tumor. I have never seen one occur in connection with a pterygium, but I do not see any reason why it should not occur on the pterygium as well as on any other part of the eye or the lids.

L. A. Bize, Tampa, Fla.—It reminds me of a case I had some years ago. The patient came into the office with the history of a thorn injury from an orange tree. The sclera was exposed for a sixteenth of an inch and a third of an inch from the outer corner of the sclera margin. He gave the history of having torn his eye. The conjunctiva was torn, healing improperly, leaving the sclera exposed. I freshened the edges and brought it together. He was in the city for five or six days. I sent him home, telling him he was all right. Some time after, probably three months afterwards, he returned to the city with the sclera very extensively exposed, almost the entire surface of the eye between the angle of the corneal-sclera margin was exposed. I put him on a mixed treatment without results. Nothing seemed to accomplish anything, and the amount of sclera exposed was so great it was impossible to pull the conjuctiva back over it. It never suggested itself to me that it was of a malignant nature. Bacteriological examinations were made with negative results. I did not know just what I had to deal with. I grafted on the eye mucous membrane from the lip, covering the conjunctiva in good shape, and told him he would be all right. He went home with the sclera entirely covered. When he returned in three or four months the entire outer surface of the eye was exposed, the entire corneal-sclera margin destroyed up to an eight of an inch. I saw that any repair of that condition was out of the question. I had the bacteriologist again take a specimen. He reported epithelioma. I advised the man what the condition was and removed the eye without any effort to preserve the orbit, and told him the probability of the return of it. He went home, and some six months later he came back with the orbital tissue beginning to break down. I told him the only thing was to clean the orbit out entirely. He objected to that, and I advised him then to visit New York and go to the skin and cancer hospital and see what they could do with him. I heard nothing of him afterwards.

W. Likely Simpson, Memphis, Tenn.—It seems to me it's rather an unusual case. I believe this section should be glad to get a report of all such cases. Anything as rare as this case should be put on record, and I believe for that reason, if for nothing else, all such cases should be reported.

As to Dr. Ledbetter's statement, it seems to me this condition is more than just a mere accident, if the irritation theory has any connection with the epitheliomas or cancers. I realize some workers do not consider the irritation theory a sound one.

I would like to ask the question of any member of the section, if they think it was necessary in this case, and is necessary in similar cases, to remove the eye? It seems to me if some of these tumors, if taken early, might be removed without enucleation, as I believe you will bear me out, that these growths do not involve the inside of the eye. I believe if taken early we are safe in removing just the tumor and using the X-ray or radium.

Richard M. Nelson, Atlanta, Ga.—I believe we had an unusually wide experience in pterygium in the Canal Zone. These cases were so common that we only picked out the more urgent and advanced cases for operation. We let the others wait until we felt operation absolutely necessary, to save time needed for more urgent cases of other eye, ear, nose and throat troubles. As it was, during a service of over six years, something

over twelve hundred pterygium operations were done by myself and associates. Yet I have never seen an epithelioma develop on either a pterygium or the site of a previous pterygium operation. My experience, therefore, tends to emphatically confirm Dr. Fagin's statements with regard to the extreme rarity of such cases as the one reported by him.

J. T. Herron, Jackson, Tenn.—In regard to pterygium, I only do the McReynolds operation. I think that is the only operation that should be done at the present time. I have been doing that operation for a long time, and I remember but one or two returns. I have never seen a case of epithelioma with a pterygium. I do not think they go hand in hand. I think it was just simply a coincidence. If I had an epithelioma on a pterygium I would not rest satisfied until the contents of the orbit were removed. If I had that trouble myself I feel I would like both removed. I would not give a thought to an artificial ball, if I knew I could get rid of so dangerous a thing as an epithelioma. I would be willing for the removal of the contents. I believe the case the doctor had and reported died. I think if he had followed the case up he would have found it so. I think if he had removed the entire contents of the orbit he might have been saved. I understood him to say he removed part of the contents of the orbit and not all of it. I think if that had been scraped out and resected back to the optic nerve as far as possible that man might have been saved.

Dudley S. Reynolds, Louisville, Kentucky.—Mr. President: As to the rarity of it, of course we all of us must admit. I know two cases, however, of epithelioma on pterygium at the present time, one living in the country back of New Albany, Indiana, and one near Lagrange. I declined to operate, suggesting the removal of the eye as the only possible chance to save the patient's life, as the epithelioma, if allowed to extend, must be as fatal as any other cancer. One doctor promised to operate upon the man up near Lagrange. I said, "If he thinks he can relieve you let him go ahead. I will not operate on you unless you permit me to take out your eye." I notice he is still going about with a gradually increasing growth of the epithelioma. It has extended nearly half way around the cornea, on the inferior and nasal side. The whole of the head of the pterygium, which occupied the limbus of the conjunctiva, is now greatly thickened and in a state of ulceration.

The other case is on the temporal side, and is clearly inoperable. There is a great deal of thickening of the conjunctiva, and the sclera is involved.

I do not think I have seen more than four, possibly five, cases in all my life. These two cases I happened to know about within the past year or two. It is less than a year since I last saw the man across the river. The man up near Lagrange I saw a month or two ago. It is more than a year since he consulted me professionally.

Chairman U. S. Bird, Tampa, Fla.—Some three years ago I was consulted about a man sixty years old who had a pterygium. It became irritated by his getting lime in his eye. When I saw it the growth was inflamed. I treated him by the ordinary methods. The inflammation disappeared. After the initial inflammation had subsided the growth became inflamed without any apparent cause. After that there was a suspicious granular appearance. I saw him two or three times after I noticed that. I advised him to have it attended to. He temporized. I did not see him again for possibly a month or six weeks. Finally he came to my office. Then his eye presented a remarkable appearance. It looked like a good sized raspberry. The growth was so enlarged that he had difficulty to close his lid. I removed the growth; I dissected it off with scissors and knife scraping the sclera as well as I could and used the electric cautery and cauterized the surface freely. He had a bad time for a week, I had to keep him quiet with morphine. He finally recovered and lived two years without any return whatever. He had only one good eye, which was the one affected. I did not think it was well to destroy his good eye if there was any possible chance. He died of another affection some time after that without any return.

I think it was possibly four months after that when a young man, this time, came to see me. In this case the growth was on the nasal side. He had a granular growth on the pterygium. The history was, a removal had been attempted four times and it recurred in every instance within the space of a few weeks. It was a very small growth, no inflammation practically at all. I took my forceps and scissors and took it out thoroughly, scraped it well, and used a suture, and within a few days he was entirely well. I had the growth examined by bacteriologists, and it was declared an epithelioma. The connection between epithelioma and pterygium is something I cannot make any statement about.

Octavius Dulaney, Dyersburg, Tenn.—We have had quite a diversity of different cases reported, but we have made no definite statement of what is to be done. It does not make any difference whether it is a coincidence, the thing for us to do is, if we find an epithelioma on the pterygium or any other part of the eyeball I think the more rapidly we enucleate the eye the better results we get. It may be benefited, at least for the time being, with the X-ray treatment, but later on to return. I think a man should positively refuse to treat any of those cases that would not submit to scraping out the cavity and leaving it clean.

Three years ago I saw a lady who had a tumor on the eye, and afterwards I had Dr. ———— examine the eye for me, and we removed everything. The earlier we operate the better results we get. About six months afterwards she had a large lymphatic gland involve the other eye and had a paralysis of speech, and later on became paralyzed and died. I think if we had removed those cancerous growths; that is, as early as possible, of course no surgeon will sacrifice any more tissue that he can help, we want to sacrifice only enough tissue to be on the safe side. The thing the older men in the profession should decide and add light to is not as to whether or not it is a coincidence or how it came; the main thing is to know what to do with these eyes when we come in contact with them. Every man has a few cases in his practice that are irregular.

N. L. Howard, Memphis, Tenn.—In dealing with a tumor of the eye, I do not consider it any different from dealing with a tumor of any other part of the body. Any tumor is abnormal, and should be removed, whether is be on the pterygium or elsewhere. I have never been so fortunate or unfortunate as to come in contact with an epithelioma on the eye; that is, on the conjunctiva, or on the cornea. I have seen them on the lids. I agree with the doctor also in removing a pterygium, I use McReynolds' operation, therefore have very little cutting.

One thing to consider in a complete enucleation is knowing the nature of the tumor you are dealing with. The pterygium is nothing more than a little benign tumor. If you have an epithelioma be sure you are dealing with epithelioma, and if you find it is of cancerous growth then do a complete operation, otherwise you can't do any good. And I should think, as the doctor stated a while ago, it is a very rare instance that an epithelioma develops on a pterygium. I have seen thousands but I have never seen a single case of an epithelioma developed on a pterygium.

Dr. Tyson, Lexington, Ky.—I saw an epithelioma two years ago on the inside of the eye, radiated blood vessels all around. I curetted it out and touched it up with ———— acid, which seemed to stop the progress of the disease. I saw the case two or three months ago. It seems to be returning. That is about the only case I have ever seen.

Robert Fagin, Memphis, Tenn.—I most highly appreciated the discussion and wish to thank each one of you that has discussed the paper, because I feel that I have learned something from each speaker.

In regard to Dr. Ledbetter about the growth of the pterygium and about its being coincidental, I do not agree with him there. He must know that any pterygium will cause that eye to become easily irritated. The pterygium is a tell-tale. If you have had any dissipation or late hours, the next day the pterygium is red and the eyeball is red. Any little irritation that comes along would possibly turn this benign tumor into a malignant form, and I do not think it just exactly coincidental. I think the pterygium should be removed for that reason, that after the age of fifty it may take on malignancy; therefore remove it while it is a benign growth.

Now, in answer to Dr. Herron about removing the eye. This was the third time he had this kind of tumor to grow on his face, a natural tendency, so to speak, so when he found it was epithelioma he readily consented for the eye to come out. He felt himself it would be best for the eye to come out. He insisted on the eye coming out. I admit I did take out a part of the orbital contents. The orbital contents, as far as I could see, was in splendid condition, and this man was very anxious after this to wear an artificial eye, because he was a widower. He was very anxious I would not remove all the orbital contents, but leave enough to wear an artificial eye, because he wanted to appear to advantage later on.

I believe these are all the questions. I thank you for the discussion.

# The Southern Medical Journal

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**Next Meeting, Richmond, Va., Nov. 9, 10, 11, 12, 1914**


# EDITORIAL DEPARTMENT

## THE PLAGUE SITUATION IN NEW ORLEANS.

History shows that no other disease has ever proved so fatal to the human race as bubonic plague. In past ages it depopulated cities and left vast areas of country without human hands to till it. But today a different tale is told. Modern sanitation has learned how to conquer this dreadful scourge, and wherever it now appears in cities occupied by the Aryan race it is promptly controlled and though some excitement and apprehension are awakened by its appearance, it has ceased to be epidemic and the deaths therefrom in any one modern city are fewer than those that occur at the same time from tuberculosis or malaria.

Thus, when in June it appeared in New Orleans, instead of a panic and a general exodus such as would have occurred forty years ago, it was met as a business proposition, one which it was certain that knowledge and energetic work would promptly eliminate. The city of New Orleans is to be congratulated upon possessing health authorities who know their business and are fearless in its direction.

They immediately adopted the principle of publicity instead of the concealment that cost San Francisco so much in its early experience. They invited the cooperation and aid of the United States Public Health Service, and Surgeon General Blue, its chief, immediately went to their assistance. His experience in stamping out the plague in San Francisco under unfavorable circumstances makes him the ablest officer in the country for such service, and the promptness with which he entered into the work and the ability he displayed at once restored the confidence that had been shaken in some quarters, so that although every American port would be threatened if the plague gained a foothold in New Orleans, not one of them maintained a quarantine against that city. The situation was a demonstration of the triumph of modern sanitation and of the con-

fidence which the people have in its efficiency in their health officials, and in the ability of the brilliant officer at the head of the United States Public Health Service.

Throughout the city every class of people united in the effort to clean up every locality and to destroy the filthy rodents which are the carriers of the disease.

Incidentally one of the results will be to make New Orleans so sanitary that other diseases which are increased by insanitary surroundings will prevail less during the present season than heretofore. At the time of this writing the infection seems to have stopped, only seven cases having developed altogether, and it is unlikely that many others will develop. New Orleans, however, is taking no chances and is proceeding with the extermination of rats in a way that will forever free it from the Oriental plague.

## THE ERADICATION OF MALARIA.

The hope of the South lies in the eradication of the endemic disease which has, more than any other one thing, prevented the population of our fertile soil by immigration from colder parts of the country. Inhabitants of the frozen regions where agricultural work is possible but few months during the year have always looked with longing eyes to a climate where every month invited the efforts of industry and promised a sure return. But the barrier of ill-health and epidemic disease has stood in the path like a threatening monster and they have feared to come. Now that yellow fever is banished the only obstacles are malaria and pellagra. The latter is not sufficiently prevalent to prevent immigration, but the daily occurrence of malarial affections is still in the way.

But the time has come when weapons have been placed in the hands of Southern physicians that render it possible that in a brief period they may conquer malaria as completely as they have yellow fever. They now know that instead of having to chase the mosquito to his lair they can deprive him of the infectious material which alone renders him pestiferous. An article by Dr. Graham E. Henson, which appears in this number of the JOURNAL, presents in an epitomized form the ways and means to accomplish this much desired purpose. He is a member of the Malaria Commission of the Southern Medical Association, of which the celebrated Dr. C. C. Bass is Chairman, and all are working together in common with an enthusiasm that insures great results. The time is propitious for a successful effort in this direction. The matter is largely in the hands of our Southern doctors. If they will read and study the article referred to, it will refresh their memories, clarify some points that have not been entirely understood, and increase their interest in this great, scientific, patriotic work.

## THE PUBLIC AND THE DOCTORS.

The change of attitude maintained by the medical profession towards the laity, which has developed so remarkably during the last few years, seems to be something more than a passing phase of sentiment. Heretofore the doctor who ventured to talk in public or in private with non-professional people upon medical subjects was looked upon with suspicion by other members of his fraternity.

They suspected him of seeking to advertise himself by drawing the attention of the public to his work and his ability in such a way as to render himself more conspicuous than they. As a consequence of this feeling the men who realized that good might be done by calling the attention of the public to many points wherein the general health might be conserved hesitated to take a step that would result in unpleasant comments upon their action. Today all this is changed. In almost every community organized medicine as a whole has come out from under the shadow of its ancient reserve and doctors everywhere are preaching in public and in private the gospel of sanitation and not a word of hostile criticism is heard. This is as it should be. We look to the clergy, whose lives are spent in

the study of spiritual sanitation, to be diligent in instructing in those matters their fellow citizens who are less well informed than they. It is only reasonable that the public should expect instruction in physical sanitation from those of their fellow citizens whose lives are spent in study along that line, and physicians are wise in coming forward as a profession and accepting the task as a natural duty.

The results must be widespread and beneficent. The public learns to have more confidence in the character and ability of the doctors, for they will see that it is not alone the lure of the almighty dollar that can command their most earnest efforts for the obviation or relief of suffering. The physicians themselves will be drawn more closely together by thus uniting in a common and honorable effort and the entire community where such work is undertaken will be unified and solidified to a degree most gratifying. Its solidarity thoroughly aroused and intelligently directed will be encouraged to undertake problems in sanitation and carry them to a successful end that without such unity would be impossible.

## THE DANGER IN TAINTED FOODS.

Physicians will do a simple duty by speaking, now and then, a few words of caution to their patrons and friends concerning the danger that lurks in spoiled or overripe fruit or vegetables. Those who go camping or yachting may also be reminded of the ptomaines sometimes lurking in canned goods.

Fortunately cases of poisoning by canned meats are extremely rare in spite of their enormous consumption. Were this not so the march of civilization would be impeded for lack of sustenance, for the track of the explorer, the pioneer, the surveyor, the canal or road builder and the soldier are marked by a trail of emptied tins. But sometimes, like a bolt from the blue, a poisoned can is used, and often death results. Generally such a package gives some indication of something wrong. It may be swollen from inward distention instead of depressed by atmospheric pressure, and make a puffing noise when penetrated. Or there may be some departure from the usual, either in the looks, taste or smell of the contents.

Such packages have been used by those who thought the heat of cooking would correct any wrong taste. The little learning that is so dangerous taught them that "spoiling" is caused by living germs and that heat would kill the germs; which is true. But they did not know that those germs might brew a poison that no heat short of burning in the fire would destroy, just as the belladonna plant would be killed by boiling, but its deadly poison, atropin, would be unchanged.

Any departure of food, canned or not, from its normal condition in the slightest degree should cause its condemnation. Especially is this precaution necessary during hot weather. One cannot be too careful.

When the mischief is done the patients most frequently present violent choleraic symptoms, vomiting, purging, cramping and colliquative perspiration. The stomach and colon should be promptly washed out with soda and water, and full doses of morphine and atropine administered hypodermically, aided, if necessary, by hypodermics of camphorated oil. Five drops of chloroform in a little strong toddy may be useful. Sinapisms to the epicardium and abdomen and hot mustard sponge baths are also in order. The patients are as those poisoned with the toxin of Asiatic cholera, but free from its germs, so that if the violent onset can be overcome or endured until reaction occurs, recovery is the rule.

## A REPORT ON RADIUM.

The Radium Institute, of London, has issued a report for 1913 which advances our knowledge of the value of radium in inoperable cancer to a notable degree.

The Institute refuses to treat any but inoperable cases, and therefore any cures whatsoever are that much gained from a hopeless condition.

Of 600 cases of inoperable cancer treated,

they report fifty as "apparently cured" and 183 as improved. Though these numbers are pitifully small, yet they indicate more benefit than is claimed by any other procedure.

A later word is spoken by the medical superintendent of the institute, Mr. A. E. Hayward Pinch, who, writing in the *Lancet* of May 23, 1914, says that the radium treatment "still continues to yield the most gratifying results." He asserts that the radium treatment in cases of inoperable carcinoma of the uterus are far in advance of those obtained by any other medical or surgical methods.

He speaks of the complete disappearance of fungating growth, arrest of hemorrhage and discharge healing of ulceration and relief of pain as of almost daily occurrence. Also in favorable cases the tendency to metastasis is distinctly retarded.

It will be noted that these cases are not spoken of as "cured," but the relief described would be priceless. Not more than fifty mgm. of radium are used in such cases and it is screened with not less than 1.5 mm. of lead, while the exposure, lasting not more than twenty hours, is spread over four or five days.

Great care and frequent douching are required after the treatment to prevent an adhesive inflammation of the vagina that may ensue.

Altogether the report will tend to stimulate still further the general interest now manifested in radium as a therapeutic agent.

## THE GERMICIDAL ACTIVITY OF CALOMEL.

To many physicians the statement that calomel is equal in its antiseptic and germicidal powers to the bichloride will be a surprise and perhaps will arouse incredulity. Yet Schamberg and Kolmen, in a well ordered investigation, published in the *Journal of the A. M. A.*, June 20, seem to have demonstrated that when calomel is suspended in an acacia solution, 1-1200 of a grain will sterilize 10 cc. of bouillon inoculated with a 0.1 cc. of a 24-hour culture of staphylococcus, and 4-1000 of a grain sterilized 0.1 cc. of anthrax culture.

But others will remember the prompt healing of many and various lesions under the simple application of calomel ointment or the rapidity with which some cases of acne yield to a mixture of calomel, zinc oxide, glycerine and 50 per cent alcohol applied at night and sponged off in the morning. Perhaps the undeniable effect of calomel internally administered as an introductory treatment for febrile diseases may be actually due, as has often been suggested, to its destruction of some of the teeming millions of various germs that were aggravating the condition.

Schamberg and Kolmen have laid the medical profession under an obligation by their careful and thorough study of the germicidal activity of calomel.

## ON TO RICHMOND!

Southern doctors are beginning to think about the trip to Richmond next November to the meeting of the Southern Medical Association. It will be a notable event. Most of the prominent physicians of the South are interested in the S. M. A. in one way or another. Many of them are members, many are contributors to the JOURNAL, and still others feel a lively interest in its success and intend to "join some time." The meeting at Richmond next November will be a most auspicious time for those last mentioned to join the Association and put their shoulders to the wheel of medical progress in the South. Richmond is truly a great convention city. Its hotels are superb and other public buildings are commodious and handsome, and the citizens have the true convention spirit which offers its hospitality to every organization worthy of support.

In June, while en route to the meeting of the American Medical Association, the Secretary of the Southern Medical Association, together with Mr. C. P. Loranz, Business Manager of the JOURNAL, who has charge of the scientific and commercial exhibits, visited Richmond.

President Stuart McGuire gave a dinner to them and to the Richmond Committee on Arrangements, at which plans for the November meeting were discussed. Mr. Dabney, Secretary of the Richmond Board of Trade, and a real convention expert, who has handled many large conventions for Richmond, was also present. He made many valuable suggestions and gave assurances of the cooperation of the Board of Trade and the municipal authorities of Richmond with the committee from the association. Seldom has such enthusiasm been manifested as shown by the members of the Richmond committee, and they have completed plans for the entertainment of the physicians who attend the November meeting of the Southern Medical Association that will make it memorable in the annals of conventions.

The Jefferson, which has been selected as headquarters for the Southern Medical Association, is without doubt the greatest convention hotel in America. It is given over largely to conventions and has 700 rooms for guests on such occasions. It contains on the mezzanine floor an auditorium that seats 1,000, and three other halls that seat from 150 to 300, so that all four sections can work on the same floor under the same roof at the same time. The magnificent lobby for general use is very large and will add much to the social enjoyment of the meeting.

If expectations are realized there will be over 1,000 members present at Richmond in November.

The phenomenal growth of the Southern Medical Association during the short period of its existence demonstrates a necessity that was felt long before it was realized. Three years ago it had but 300 members. Today 3,200 Southern doctors have paid their dues and adorn its rolls. Their names are those of the leading physicians, surgeons and specialists in their respective communities. Many of them are known by reputation throughout the country, and some of them have a world-wide fame. The articles they read at the meetings of the Association, all published in the JOURNAL, are authoritative and furnish most valuable additions to modern medical literature. To their work and their influence the brilliant success of the organization is largely due, but the ceaseless efforts of the officers of the Association have resulted in securing many members. Among these the work of Miss Della Purifoy, the Assistant Secretary, is especially worthy of mention. She has attended the meetings of the various State Medical Societies in the South and has everywhere received many cordial courtesies from their members. During the present year she has visited such meetings in six states, and at each visit has secured a gratifying number of new members for our organization.

Perhaps the element that has contributed most largely to the rapid growth of the Southern Medical Association is its official organ, THE SOUTHERN MEDICAL JOURNAL. It has subscribers in every one of the sixteen Southern states and influences the medical opinion of a terirtory greater than an empire. The editors, in cooperation with the Council of the Southern Medical Association, have been careful to exclude all material that might originate controversy and have adopted advertising standards that make the JOURNAL clean from cover to cover. There is every evidence to indicate that the efforts and the sacrifices of those connected with THE SOUTHERN MEDICAL JOURNAL are appreciated by the physicians of the South.

Yet valuable as all these agencies have been in building up the Association, the one more potent than all the others was the absolute necessity felt by the leading Southern physicians for some organization that was their very own, wherein they could meet other doctors whose problems were the same as theirs and where no ex-cathedra statements would pass unchallenged because of the supposed eminence of their authors, and wherein under no circumstances whatsoever would the element of professional politics be allowed to enter.

The meeting at Richmond will, in a certain sense, be the consummation of this desire. The

men who will contribute papers and discuss them will be Southern men, men whose work is the property of the profession and a blessing to the race. Doctor, the meeting will be a memorable one.

You cannot afford to miss it, and neither can your friends. Tell them so.

## A WORD TO AUTHORS.

The JOURNAL is proud of the number and eminence of the physicians whose articles constitute the chief attraction and value of its pages. Their contributions compare favorably with those found in any other periodical medical publication. They are read and carefully considered by the progressive element in Southern medicine. Yet excellent as this material is, it sometimes is so written as to impair its own value and lessen its effect. The fault generally lies in the excessive length of the article. As a rule the mistake is made by men who are more accustomed to work in the office, by the operating table or the bedside than to writing for publication. When, therefore, they have something to say for the general good, instead of saying it at once, plainly, clearly and without any trimmings, they go away back into medical history for a starting place. They drag in Hippocrates and Esculapius, climb up to the present age on a ladder of classical names, wander awhile in a labyrinth of German, French and Italian authorities and finally tell their stories. And just here they often make another mistake and begin to abbreviate and omit words belonging in their work. In such cases Epsom salts becomes Mg. So., nitrate of silver is Ag. No. 3, potassium iodide K. I., and water is $H_2O$. Then they omit the articles "a" and "the" from their sentences, and altogether mutilate the beautiful forms of medical expression evolved from the minds of the master writers, from Oliver Wendel Holmes to S. Weir Mitchell.

The JOURNAL ventures in all kindness the following words of advice to prospective writers of medical articles:

(1) Make your articles as short as is compatible with a clear expression of your facts or ideas. Many an article is not read because it is so long; or else its point is smothered in verbosity.

(2) Leave Hippocrates and the other ancients undisturbed. They should rest now.

(3) Do not spoil your work with a lot of quotations from foreign authors. Refer to them, if you must, in a foot note.

(4) Have your paper typewritten and with wide spaced lines. And

(5) Keep a copy.

## DEATH OF DR. NELSON.

On the 12th of May, 1914, in the city of Memphis, Tenn., Dr. R. B. Nelson, one of the rising young physicians of the South, died at the age of 33, the results of injuries received in an automobile accident. The car in which, with his partner, Dr. A. C. Lewis, he was returning from a professional visit into the country, was struck by a railroad train and he was terribly injured. For four weeks he made a brave but unsuccessful struggle for life.

The death of such a man is a loss not only to his community, but to the profession of the entire South, for he was a leader in thought and action. He was a member and an officer of the Southern Medical Association, and so impressed were his colleagues with his energy and ability that at the Lexington meeting last November they made him Secretary of the Section on Eye, Ear, Nose and Throat. He left a widow and two daughters. In expressing sincere regret and sorrow at this occurrence the JOURNAL voices the sentiments of every member of his profession who knew him and of the great Southern Medical Association to whose interests he was so actively devoted.

## THE JOURNAL OF THE FLORIDA STATE MEDICAL ASSOCIATION.

THE SOUTHERN MEDICAL JOURNAL welcomes into the arena of medical journalism this new

aspirant for the favor of medical men. If there is any augury of success in a good start it should succeed. In the first place, it takes its stand upon principles that cannot fail to win the approval of all thoughtful physicians, in that it will not accept the advertisements of any class of medicine that has not successfully stood the scrutiny of the A. M. A. Council on Chemistry and Pharmacy. This at once places it upon a moral plane far higher than can be claimed by any journal that prostitutes its pages in the service of preparations declared by the Council to be dishonest or inert. Then, too, the personnel of its staff guarantees its conduct an ability and breadth that cannot be surpassed. Its editorial and managing staff, headed by the well known Dr. Graham E. Henson, have for years taken a prominent part in medical organizations and have contributed much of great value to its literature. It naturally adds to the appreciation this journal feels for the newcomer to know that every member of that staff is a prominent and enthusiastic member of the Southern Medical Association.

## DR. VAUGHAN'S ADDRESS.

The address that Dr. Vaughan delivered in his capacity of President of the American Medical Association at Atlantic City, June, 1914, is a medical classic.

Beginning with a retrospect that included the famous physicians of antiquity, he surveyed the civilizations of ancient Egypt, Greece and Rome, and showed conclusively that their successive decay was due less to luxury than to disease.

Continuing along this line of thought he brought the history of medicine in its relations to civilization down to the present day and finally presented the example of the sanitation of Panama as a demonstration of the theory he was elucidating. Throughout the discourse striking incidents of pestilence were cited and their influence upon the civilization of the peoples who suffered them was pointed out.

The whole address shows a broad culture and a high grade of scholarship. Nothing superior to it in its peculiar province will be found in medical literature. The JOURNAL congratulates the author upon his achievement and the profession which he adorns upon the possession of so brilliant a member. He has justified the judgment of the great medical association which placed him at its head as the representative American physician.

## SOUTHERN HEALTH RESORTS.

The wonderful resources of the South cannot better be illustrated than by reference to the health resorts in the various Southern states. The coast resorts from Old Point Comfort to Galveston have beaches and surf bathing that cannot be excelled, while the thermometer records of the Weather Bureau prove them to be practically as cool in summer as the extensively advertised resorts along the Jersey coast. The mountains of West Virginia, Virginia, North Carolina and Tennessee provide for the lover of nature scenery unsurpassed in the world, with the crisp pure air and invigorating climate in summer like the delightful months of November and December in Florida and along the Gulf Coast. Every kind of mineral water known to man, at temperatures varying from the coldest natural waters to those of Hot Springs, in Arkansas, can be found in the South. Fishing in mountain streams where trout are gamest, or in the waters and tributaries of the Atlantic and the Gulf of Mexico, where salt water bass, mackerel, pompano and tarpon abound, and hunting for every kind of game, from quail to bear, may be enjoyed at or near various Southern resorts in a way that is not possible elsewhere. Men have also done their part in making our coast and mountain resorts available and comfortable for those who are well to enjoy and for the sick to receive the benefit of their therapeutic properties. The railroads in the South now have the best of equipment for passenger service and nowhere are there better and finer hotels than at some of the Southern resorts.

In order to derive the best results from the climatic and mineral water treatment of disease it is important for the services of scientific and skillful physicians to be available, and among the very best men in American medicine are practicing in Southern health resorts, where they can apply not only the methods of diagnosis and treatment that are employed in any medical center, but where they can give their patients the benefit of the climate baths or the internal use of mineral waters available and indicated. One of the beneficent results accomplished by the Southern Medical Association has been the contact and association of the physicians residing in the various health resorts with the practitioners of medicine in the sixteen Southern states. Physicians, in sending patients to health resorts—and a large proportion of those who patronize those places are advised to go to them by physicians—prefer to know personally the physicians to whom his patients are referred, or at least to have a personal knowledge of their attainments as demonstrated by the papers read and discussed at medical meetings. The Southern Medical Association and THE SOUTHERN MEDICAL JOURNAL have given, and will continue to give, the physicians of the South the opportunity to judge of the relative merits of the medical men to whom their patients are referred, and in so doing are performing a service to the medical profession of the South as well as to those who seek a change of climate, for health or pleasure, or who desire the relief that may come from the use of the baths and mineral waters at various springs.

The spas of Europe are great assets to the countries in which they are located because they attract thousands of well-to-do people from all over the world, particularly from the United States. The different mineral springs in the South are chemically and thermally identical with and often superior to the waters of the European resorts, and many of them are as well equipped for the scientific application of the principles of hydrotherapy and balneo-therapy, yet thousands of our good citizens, who are often not in physical condition for traveling, and millions of American dollars, go to European spas and foreign doctors, when they could get the same or better treatment at convenient resorts in the South under the observation of the best physicians of any country.

Notable among the resorts that have been equipped to compete with the European spas is White Sulphur Springs, West Virginia. This fashionable watering place, celebrated also as a popular resort for more than a century, determined to surpass in comfort and equipment any spa in Europe, and it has succeeded. The magnificent fireproof Greenbrier Hotel was built, which added to the famous "White," makes one of the largest as well as one of the finest hotels in the world. The best of everything in the different kinds of baths, as well as every appliance of mechanotherapy that have made the European resorts famous, were installed, and it is not an exaggeration to say that none of the Continental spas have as elegant or as complete baths as this Southern resort. The Baths of Caracalla or others that adorned ancient Rome were plain compared to the luxurious baths of White Sulphur.

Physicians everywhere should be informed of the therapeutic properties of the various mineral waters, not always as claimed by the proprietors of the different springs, but of the facts as established by the experience and observation of competent medical men. They should know of the conditions benefited by and the indications for the employment of thermal and medicated baths and they should also know the localities best suited to patients suffering from diseases like tuberculosis, where the proper climate gives the best chances for recovery. The need of this training has been recognized by the Johns Hopkins Medical School, which provides instruction to its students on climatology, hydrotherapy and balneo therapy by a series of lectures given each year by Dr. George D. Kahlo, of White Sulphur Springs.

When the medical profession generally be-

comes informed on these subjects the Southern health resorts from Maryland to Texas and from Kentucky to Florida will come into their very own, because nature has lavished upon the South her best gifts in the waters that heal and in climatic and meteorologic conditions that invigorate the weary and restore health to the afflicted.

# THERAPEUTICS

## SERUM THERAPY.

The application of the various serums to the prevention or cure of disease is almost a separate department in the study of therapeutics, and in the condensed consideration possible in these notes only the most superficial attention can be given to it. Yet the subject is of such great and growing importance that a few words concerning it, though not new, may be of interest to some readers.

What is it that protects a man against a second attack of smallpox, scarlet fever, measles or yellow fever?

This question has been ever present in the minds of physicians since the day when Jenner proved the value of vaccination.

The first step towards solving the problem was the discovery of pathogenic germs, of living organisms whose presence in the system caused the phenomena of the disease of which they were the essential element.

Then why, when once they gained a foothold in the system, did they not continue there indefinitely, repeating the symptoms day after day until the patient died? How could the patient get well? What was recovery? What did it? Did the bacteria manufacture something in the blood that finally destroyed them, as our own breath would destroy us if we were shut up in a close room? In 1880 Pasteur answered the question with a "yes." He showed that fowls inoculated with weakened cultures of chicken cholera were afterwards proof against that disease. That was the second step, and though misinterpreted, led the way. Then Roux filtered all the bacilli out of a culture of that most virulent of bacilli, anthrax, and by injecting the remaining fluid into susceptible animals rendered them proof against the disease. So there was something in the solution, the culture medium, that did it, and necessarily that something was a chemical substance. The problem was suposed to be solved.

Bacteria generate a chemical substance which protects the system against their attacks. Whenever, in a patient suffering with bacterial invasion, a sufficient amount of that substance is generated, the patient gets well. That was the original theory. But further investigation showed that the bacilli do generate a chemical substance, but it is a toxin, and from the effects of that poison upon the blood and nervous system come all the pathological phenomena; but that stimulated by its presence our own vital powers, in some unknown way, generate an antidote to that poison, an antitoxin to that toxin, that neutralizes it and renders the system immune for a longer or shorter period according to the nature of the disease. Thus, in the most brilliantly successful instance of protective serums, the diphtheria antitoxin, a horse is first injected with a small amount of virulent diphtheritic toxin. He soon develops fever and other symptoms of illness. When these subside he is given a stronger or larger dose, and after recovering from the reaction, still another, and another, and so on, until it requires hundreds of times the amount of poison to affect him that it did at first. His blood is so saturated with the antidote, the antitoxin, that only colossal doses of the poison can affect him at all. He is then bled from the jugular vein, thorough asepsis being observed, and from 6 to 12 pints of blood are taken. This is received in sterile flasks, placed upon ice until the coagula separate from the serum, and the latter is drawn off and tested.

The testing is done by trying the serum upon guinea pigs. One hundred are given a fatal dose each, and the amount of the serum that will protect them against it is called a unit. In other words, sixty pounds of guinea pigs inoculated with a fatal dose of diphtheria toxin require a certain amount of serum to protect them against it. That quantity is called a unit. So that when we give a sixty-pound child a thousand units of diphtheria antitoxin he has enough to neutraliez a thousand times his fatal dose of toxin. Diphtheria antitoxin is absolutely harmless, and the only limits to the doses are comprised in one word, "enough," and the prime injunction is "soon." It may be almost said that if the immunizing injection can be given within the first

twelve hours of the attack recovery is certain. The percentage of recoveries where the treatment is begun within the first 24 hours is not less than 95 per cent. If it is delayed until the second day the proportion of deaths will be increased, if on the third day the fatalities will reach 15 per cent, while after the fourth day from 25 to 35 per cent prove fatal.

Previous to the introduction of the serum the fatalities approached 50 per cent. The technique is simple. The place for injecting the serum should be where the tissues are loose under the skin, such as beneath the scapula or on the buttocks. The area should be scrubbed with soap and water, then painted with half strength tincture of iodine. An inch square is large enough. The needle should be thrust quickly between folds of the skin held up by finger and thumb, or else into a spot rendered tense and smooth by stretching. The serum should be slowly and steadily forced in, the needle withdrawn, and a piece of adhesive plaster three-quarters of an inch wide and three inches long placed over the wound in such a way as to draw the sides together. This should be covered with a piece of lint, held in place by a light bandage.

Sometimes a slight nausea, or even some vomiting, follow, and urticaria occasionally appears after the injection, but they signify nothing and may be neglected. The immunizing dose, for protection of those exposed to infection but who have not yet showed symptoms of the disease, is from 500 to 1,000 units. When it has developed 4,000 to 10,000 units should be injected at the earliest possible moment, and if in 12 hours no improvement is shown it should be repeated. One of the first indications that it is useful is the detachment of the false membranes round the edges. If the serum fails to benefit the case after three days of energetic use it is not worth while to persevere.

The local application of antiseptics and germicides to the visible affected areas must not be neglected. Experience has demonstrated their necessity, for other bacilli besides those of diphtheria multiply in the diseased area and help to depress the vitality.

## TETANUS ANTITOXIN.

Unfortunately our hopes for a success with this serum similar to that with diphtheritic antitoxin have not been realized. As an immunizing agent, protecting those wounded with infected substances, it has proven reliable. How it does so is inexplicable, as it operates through a different channel from the toxin. Antitoxin of tetanus is absorbed into the circulation, and therefore distributed throughout the system. Tetanus toxin is not absorbed by the circulation, but by the nerves themselves, which carry it to the central nervous system. When symptoms appear the poison is beyond the reach of the antitoxin, whether injected into the tissues, the veins, or the brain or cord itself. If injected into the infected wound while the bacilli there located are still pouring out their poison it will more reasonably be hoped that good may be accomplished.

But clinical experience is the court of last resort in therapeutics, and experience shows that the injection of tetanus antitoxin into the tissues of an animal so wounded as to render infection extremely probable will almost invariably confer immunity for that time.

In many cities the tetanus poison is so universally present that any horse whose foot is wounded sufficiently to draw blood is almost certain to die of tetanus unless thus protected. The examples on both sides of the question are too numerous to admit of doubt.

Many human beings also suffer with the disease, and the poison can generally be traced to a stable. Recoveries sometimes occur, both with and without the antitoxin. At present beyond its value as a prophylactic the usefulness of tetanus antitoxin is sub judice.

## RABIES.

Antistreptococcus serum, and serums for the prevention or cure of tuberculosis, pneumonia, cholera, typhoid fever, and anthrax are still the subjects of investigation, but their utility remains to be further demonstrated. Rabies is prophylactically treated after the manner of generating diphtheria antitoxin in the horse. The patient bitten by a rabid animal is inoculated with attenuated rabic virus to cause the system to secrete an antitoxin. The inoculations are made stronger and stronger day by day, until the subject can bear with impunity a dose of the poison that would result fatally in a much larger susceptible animal than himself. His vital powers have generated the antidote more rapidly than the toxin has been elaborated, and he is saved from one of the most dreadful forms of death. Laboratories for the application of antirabic treatment have been established by the governing powers in many parts of the world, where those so unfortunate as to need it may secure it at public expense, and there are many private institutions where the patient is cared for and treated most carefully.

It is to be hoped that the frequent demonstration of the value of such institutions may soon annihilate the silly belief in so-called madstones.

In the case of snake bites conditions are encouraging. Chalmette has developed an "antivennene," which, if injected immediately after the bite of a cobra, will prevent the usual fatal train of symptoms, and he claims that it will even save life after they have appeared. The poison of the cobra is different from that of the crotalus, or rattlesnake, and is no antidote to it. A Japanese investigator, Noguchi, is developing an antitoxin for the crotalus poison which he believes will be successful. Whether it succeeds or not, it should be understood that though moderate doses of whiskey may help to sustain the heart against the depression resulting from the bite of a poisonous reptile, the immoderate doses sometimes administered are not only useless, but in all probability have often been responsible for the deaths they were intended to avert.

### NUTRIENT SERUM.

It has been found that when the serum of an animal, such as a horse, or a goat, has been heated to 149 degrees and then cooled to 99, it can be injected into the tissues of human beings, where it will be absorbed and aid in nutrition. Experiments demonstrated that animals deprived of all nourishment but supplied with serum hypodermatically lived an appreciably longer time than their controls not thus supported. In cases where ordinary methods of feeding are barred, as is sometimes true in gastric ulcer, obstinate vomiting, exhausting diseases of children, etc., from 8 to 10 fluidrachms (30.0—40.0 cc.) may be thus administered to children, and three or four times that amount to adults, in 24 hours. The spot chosen should be thoroughly cleansed before inserting the needle, and a new place should be chosen each day. It is better to divide large doses into two or more injections.

# CORRESPONDENCE

## THE GOLDEN RULE AS A GUIDE IN MEDICAL ETHICS.

### ANOTHER DOSE OF WHAT DAD THINKS.

My Dear Son: Of all the rules which have for all these centuries guided the conduct of doctors, none so fully covers the complete and perfect requirements in every aspect of the professional life as the Golden Rule. With it there is no danger that a physician will go astray in his duties to his patient, which are always the paramount ones, or in his obligations to his fellow practitioners, or to his family or himself, or to his country. Without it there is no possible chance that a man can be steadily right in any of these relations. It is a strange thing that so few words can so meet the requirements. "Therefore all things whatsoever ye would that men should do to you, do ye even so to them." To me there is no question that had Hippocrates known that such a sentence could be evolved he would have let his own code of ethics wait or have suppressed it entirely, and, I think, the progress of the profession would have been helped by the change, even though the Hippocratic Oath was and is good in every line and precept.

I think a young man, like yourself, starting out in what may be a long professional life, should have some very definite and fixed principles and know exactly where he stands on several points. But he should know that another man may be entirely honest and yet see every point so settled to be entirely and totally wrong from his point of view, and still be an honest man and a fairly decent citizen and an observer of "the Code." But for yourself there should be a most rigorous and exacting determination to live up to the Golden Rule. If you do this you will not charge another doctor for any purely professional service you may render him, nor will you be apt to stick a rich man for the "making good" of the deficiencies of some poor devil who cannot pay and for whom you do what appears like a job of fine and perfect charity. This thing of thinking that every rich man is the natural and God-given victim who has to pay the shot of the poor neighbor who cannot settle it himself, does not look to me very good in the line of applied ethics. Surely it would not come in under the Golden Rule, nor could it have more than a bare chance to come through under the Hippocratic oath on a claimed omission. I would think that a man who overcharges the rich that he may under-charge the poor would not be safe with the money of another, nor an altogether safe man to trust in any way, for stealing from a known thief is not considered truly ethical in any society, and even the rich man must have the benefit of the doubt as to how he got his wealth.

Do you remember the Irishman who wanted to

be kind and pleasant to his neighbor, the rabbi, and so said to him one day, "Doctor, if you ever get time to call on the uncircumcised I'd like to have you come to our home and meet my wife," and then thought of the way it sounded, and was abashed? I'd try to do my thinking a little before the talking came, and so save trouble many times; and the same applies to the things one should do. If there is a fixed and settled way of looking at the problems which arise, and are apt to arise at any time in the life of a doctor, he will be found to be armed and ready to do the best under any and all circumstances and at any and all times. It is well to know that an invitation to produce an abortion will not be considered under any circumstances. It is likewise well to know that a false certificate will not be given to anyone nor for any purpose. A steadfast determination to be honest at all times is the best guarantee that you will be so. In the matter of truth telling. I must say that I think there should be a certain latitude allowed to the conscientious doctor. If your first duty is to save life, and we all think it is, then there are times when you must lie like a nobleman or a king, making no excuses to yourself except the one "that it must be done to save life." You can roughly divide the lying done by doctors into three classes, the good, the bad, and the doubtful. If the lie is told solely for the good of the patient, with nothing else in sight or likely to result than the benefit of the sick, then it is of the first class, and is good. If it is told to benefit the doctor himself it is bad, and every letter in the word should be a capital. If the benefit is double, and both patient and doctor are benefited, then it belongs to the doubtful class. It, of course, requires sense to properly use the therapeutic power of a necessary and well-told lie. A man must know when it is necessary, when it is absolutely needed to cure, or help to cure, the sick, and his art in the telling of it must be perfect, for the dangerously ill often have an uncanny insight into the truth, and the thing must be supremely well done to carry conviction and accomplish its purpose. A "boggle," and a life is lost. I doubt if a man practices ten years without accumulating more than ten times that number of instances where he had to lie, with the full intention to deceive, in order to save life. I know I can give you several out of my portfolio of fond recollections which would illustrate fully and strongly the need of art and the need of a feeling that the duty of saving the life before me justified the most heroic measures to twist the truth out of shape.

A man who has a good ability in the finding of reasons might say that this thing of lying to the sick is covered by the Golden Rule, for it surely is doing to the other as he, under similar circumstances, would wish to be done by.

I do not think a cheerful face and the habit of seeing every bit of hope there is in any case comes under the head of lying. It's only making the best of things.

In conclusion let me advise you to look most carefully at all the parts of the Code of Ethics which do not come squarely in line with the Golden Rule. "If the circumstances were reversed how would it look to me and how would I want the other man to act?" is a fine way to test the situation, and the right line of action will infallibly come out. It often takes a man to adopt it, but the deeper satisfaction lies with the Golden Rule in every instance of conflict.

Hoping you will consider these things, I am,

Your own old dad,

HIPPOCRATES PLUM, M.D.

# BOOK REVIEWS

### A Text-Book of the Practice of Medicine.

By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine, Medico-Chirurgical College, Philadelphia. Eleventh edition, thoroughly revised. Octavo of 1,335 pages, fully illustrated. W. B. Saunders & Co., Philadelphia and London, 1913. Cloth, $5.50 net; half morocco, $7.00 net.

It is especially adapted to the busy practitioner, contains the majority of modern methods of diagnosis of medical complaints, and the new matter introduced has been systematically classified. Pathologic sections deserve special mention, and the aim is to associate clinical symptoms with morbid lesions. Bacteriology is prominently mentioned under etiology; and the tabulated differential diagnoses scattered throughout the volume enable one to get a quick but thorough grasp of the situation in hand. Especial care is also given to the treatment of the individual diseases.

### Practical Sanitation.

A Handbook for Health Officers and Practitioners of Medicine. By Fletcher Gardner, M.D., First Lieut., M. R. C., U. S. Army, etc, and James Persons Simonds, B.A., M.D., Professor Preventive Medicine and Bacteriology, University of Texas, etc. Price $4.00. C. V. Mosby Company, Saint Louis, 1914.

(Continued on adv. page XX.)

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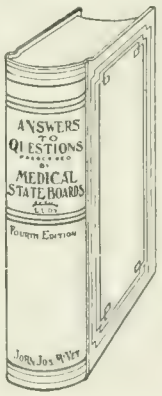


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(Continued from page 680.)

It is a well illustrated and an intensely practical treatise on public and personal hygiene, entering into details and discussing their many features. It aims to aid the practical health officer and general practitioner in solving their public health problems, and to provide a safe way for them to meet almost any emergency, this supplying a long-felt need on the part of the sanitary officers of the smaller cities, towns and villages. It is wisely divided into the three large divisions of epidemiology, general sanitation, and laboratory methods, and includes under these separate heads the latest ideas and most modern technique employed today.

# SOUTHERN MEDICAL NEWS

## ALABAMA.

At a meeting of the Red Cross Seal Committee in Mobile, in June, Miss Zena Burkholder, the visiting nurse, showed the absolute need of the work that she was doing in caring for tuberculosis patients. In three months she made 379 visits and caused eleven houses to be fumigated. Out of thirty-five severe cases, fourteen had died.

The City Health Officer of Mobile, Dr. Charles A. Mohr, announced in June that typhoid fever is entirely under control within the city. There was but one death from that disease during the preceding month.

At a meeting of the Mobile County Medical Society it was announced that owing to a resolution by the State Board of Medical Examiners, a person engaged in the practice of medicine in violation of the law would not be eligible for examination for a license to practice medicine. The resolution reads as follows:

"Be it resolved by the State Board of Medical Examiners, that on and after June 1, persons who engage in the practice of medicine in violation of the law shall not be eligible to take examinations for a certificate to practice in Alabama.

"Second. Prescribing for patients, responding to calls to see sick persons, with or without accepting fees, shall be deemed as practicing medicine; although it may be claimed that it may be done in connection with or under the direction of a licensed physician. Provided that these resolutions shall not apply to internes in a hospital or infirmary nor to resident physicians in hospitals for three months after their graduation."

At Gadsden, smallpox prevailed to a considerable extent during the month of June. The disease was light in character and was finally under control.

A meeting of the St. Clair County Medical Society was called in June to elect a county health officer to fill the unexpired term of Dr. Harris, who moved from the county.

The Chilton County Medical Society met at Maplesville, June 3. Certain prevailing diseases were discussed with great interest.

Dr. H. N. Rosser, Birmingham, health officer of Jefferson County, announces that he will hereafter issue a monthly report, showing the diseases in the county and the death rate and causes.

Dr. Gaston J. Greil, Montgomery, has been re-elected chairman of the Executive Committee of the Montgomery Anti-Tuberculosis League.

Dr. Andrew Howard Ryan has been appointed full-time assistant in the department of physiology, and Dr. W. A. Clark, assistant professor of anatomy in the University of Alabama, Mobile.

Dr. Isham Kinbell has moved from Jackson to Auburn, where he will be associated with Dr. C. S. Yarbrough.

## ARKANSAS.

The Pulaski Heights City Counoil met in special session, June 15, for the purpose of discussing plans for proper sanitation. A sanitary campaign had been begun by H. F. Alciatore, President, and Dr. S. W. Boyce, Secretary of the City Board of Health, consisting in the destruction of mosquito-breeding places, hauling of trash to the dump grounds and the extermination of flies.

Dr. Morgan Smith, of the State Board of Health, announced that the Committee on Ways and Means had appointed a committee to consider the erection of a state hospital at Little Rock. Dr. M. D. Ogden and Dr. A. R. Stover, Dr. Milton Vaughan, Dr. E. C. Witt, Dr. W. R. Bathurst and the chairman, Dr. Anderson Watkins, constitute the committee.

Dr. N. J. Latimer, of Carning, has returned from spending some time doing post-graduate work in New York.

Dr. W. B. Henderson, of Hot Springs, has announced the removal of his office from Arkansas National Bank Building to the new Thompson Building.

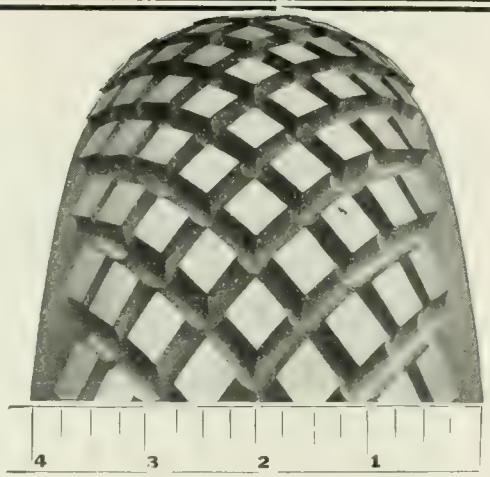
## NORTH CAROLINA.

The sixty-first annual session of the North Carolina State Medical Society opened at Raleigh, June 16, with more than three hundred physicians attending. Governor Craig made the welcoming address, the subject being, "Discovery of the Germ Theory." The President, Dr. J. M. Parrott, in his opening address assailed the prescribing of whiskey through drug stores and declared his opinion that it is an unmitigated evil.

The State Board of Medical Examiners at Raleigh examined 118 applicants for license to practice medicine at its June session. Of this number 81 successfully passed the examination and received their licenses, 37 failing. First honors went to Thaddeus Wilkerson, Roxboro, with a grade of 93.

Dr. D. E. Sevier, county health officer of Buncombe County, was elected Vice-President of the Association of North Carolina Health Officers, June 16, at Raleigh. Dr. W. M. Jones, of Guilford, is named President.

(Continued on adv. page XXII.)

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(Continued from adv. page XX.)

At Wilmington 500 representative citizens met to protest against the action of the City Council in reducing the annual appropriation for the city health department.

Dr. Richard H. Lewis, of Raleigh, for many years Secretary of the Board of Trustees of the university, has resigned on account of ill-health.

In Orange County the Rockefeller hookworm commission is energetically covering the county in its campaign. Dr. J. H. Deane, who is in charge, has established free dispensaries at eight different points where he and his assistants will meet their patients. Their headquarters are at Hillsboro.

Dr. E. J. Wood, of Wilmington, addressed the State Society on the subject of "The Occurrence of Yaws in the United States." He claims that it is entirely new in this country.

Dr. Howard S. Kinne, of Greensboro, announces that he will be associated with the Telfair Sanitarium of Greensboro in the capacity as resident physician. The sanitarium buildings have been thoroughly overhauled and much improved, and will be known in the future as the Glenwood Park Sanitarium.

## SOUTH CAROLINA.

At Charleston, June 4, at the Academy of Music, the annual commencement exercises of the Medical College of South Carolina were held. Dr. W. C. Rucker, Assistant Surgeon-General of U. S. P. H. Service, delivered the address. There were nineteen graduates in medicine and twenty-two in pharmacy.

The question of legalizing medical inspection of school children has become a political matter and is discussed upon the stump preparatory to the next election.

A permit has been issued to Drs. James W. Babcock and Eleanor B. Saunders to erect the Waverly Sanitarium, Columbia, to accommodate about 100 patients.

At the meeting of the State Board of Health the following officers were unanimously re-elected: President, Dr. Robert Wilson, Jr., Charleston; Secretary and State Health Officer, Dr. James A. Hayne, Columbia.

The South Carolina Red Cross Nursing Service Commission has been organized and is ready to receive applications for Red Cross nursing service. Applications may be made to Miss M. E. McKenna, the chairman, St. Francis Xavier Infirmary, Charleston, or to the Secretary, Miss Agnes Watt, 2001 Assembly Street, Columbia.

The A. Markley Lee Memorial Annex to the Hospital and Training School for Nurses, Charleston, the cornerstone of which was laid with appropriate ceremonies, December 15 last, has been opened to receive patients.

Dr. Frank M. Durham, Columbia, is now in the Columbia Hospital suffering from knife and razor wounds on the side, cheek and thigh, received from a group of men who assaulted him, presumably with robbery as a motive.

Dr. Margaret L. E. Whiteside has been appointed second assistant physician at the State Hospital for the Insane, Columbia.

## FLORIDA.

Since the establishment in Pensacola of the State Bacteriological Laboratory about four years ago, more than ten thousand specimens have been received and examined, showing the appreciation of the institution by the physicians of the state.

At the Clinical Congress of Surgeons of North America, which convenes in fifth annual session at London, England, July 27, three physicians from Tampa will be present among the three thousand American visitors. They are Dr. John S. Helms, Dr. Louis A. Bize and Dr. William P. Adamson. They sailed on the Oceanic, July 13.

The city health department of Jacksonville, in its report for May, 1914, shows a considerable decrease in the death rate compared with the same period last year. It also shows an increase in the birth rate, both white and colored, as well as increased number of marriages.

The directors of the Florida Tuberculosis Sanatorium, Trilby, announce that Dr. Hiram Byrd, former assistant state health officer, has accepted the presidency of that institution.

## GEORGIA.

Dr. J. P. Kennedy, of the City Board of Health of Atlanta, advises all persons going to a summer resort to be vaccinated against typhoid. He says Atlanta is the safest place to spend the summer because its water supply is so protected and pure.

The Atlanta Constitution says that Georgia is the one state in the nation that has not even the semblance of a law providing for a state-wide system of vital statistics.

At Macon early in June the city hospital reported a larger number of cases under treatment than ever before in its history. Both pay and charity wards were full.

The Atlanta Medical College, at its commencement exercises in June, presented their diplomas to 125 graduates of the college. Governor Slaton delivered the address of the evening.

At Americus, June 17, forty physicians attended the fifteenth semi-annual convention of the Third District Medical Association, of which Dr. W. E. Edwards, of Cordele, is President, and Dr. Charles Gree, of Oglethorpe, is Secretary.

Dr. Wm. Simpson Elkin, of Atlanta, announces that he has moved his offices from Luckie St. to Suite 1029 Candler Building.

As the result of a competitive examination held simultaneously in Savannah, Boston, Washington and Chicago, Dr. Dewitt C. Gilles, at present on the staff of the Bureau of Animal Industry, U. S. Dept. of Agriculture, has been appointed Chief Food Inspector for the Board of Sanitary Commissioners, City of Savannah. This examination was given wide publicity by advertisements in the Southern Medical Journal, the Journal of the American Medical Association, the American Journal of Public Health, and in several journals of veterinary medicine. The appointment is for a period of three years, and the appointee is assured of freedom from political interference. Dr. Gilles secured the highest grades in examination in food and meat inspection, and secured also a high rating for education and experience. The Journal noted in an editorial the excellent method employed of filling this important position.

(Continued on adv. page XXIV.)

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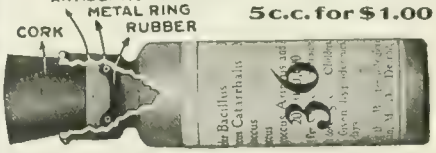

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(Continued from adv. page XXII.)

## MISSISSIPPI.

The State Board of Medical Examiners met at Jackson for the examination of applicants for license to practice medicine on June 17. Governor Brewer appointed Dr. N. C. Womack, of Jackson, a member of the board to succeed the former President, Dr. G. S. Bryan, of Amory, resigned. About 150 applicants were expected to present themselves for examination.

Dr. L. L. Lumsden, of the U. S. P. H. Service, has been sent to Union County with six assistants to inaugurate a campaign against typhoid fever. The State Board of Health has contracted with the H. M. Alexander Company to supply all necessary vaccines and anti-toxins which will be resold to consumers at very low rates.

Reports from various counties to the State Board show that in Mississippi pellagra is spreading at an alarming rate. Figures show that whereas in May, 1913, 261 cases were reported, in May, 1914, the number reported was 1,238.

At a meeting of the Harrison County Medical Society the Secretary, Dr. Daniel J. Williams was instructed to request the press and press correspondents to refrain in future from mentioning the names of physicians and surgeons in connection with accidents and sickness.

The physicians of Wesson report that the town is freer from sickness of any kind than it has been for a long time.

At Jackson the State Board of Veterinary Examiners examined thirty-five applicants for licenses. This is the first examination of the kind in this state.

The State Board of Health adopted a resolution that all county health officers who failed to submit their reports promptly will be relieved and their successors appointed by the Executive Committee. They were given until July 1 to file their reports.

## MARYLAND.

At the James Lawrence Kernan Hospital for Crippled Children, Dr. R. Tunstall Taylor, who has been acting as surgeon-in-chief as well as business manager, has been relieved of the duties of the latter. Dr. Walter S. Niblett has been made superintendent and business manager. The changes were made with the approval of Dr. Taylor.

At Baltimore a Miss Ellen N. LaMotte, superintendent of nurses, has resigned and Miss Eleanor McI. Jones has been appointed her successor. Dr. Alexander J. Gillis has been appointed assistant superintendent of Sydenham Hospital. Dr. Gustave H. Woltereck is appointed throat inspector for public schools.

Dr. Henry E. Austin, of the New Jersey State Hospital for the Insane, has been appointed physician-in-chief for the Hospital for the Insane at Bay View.

At the commencement exercises of the College of Physicians and Surgeons, held at Albaugh's Theater, fifty-eight students were graduated. Rev. A. L. Ferris delivered the oration. First prize was awarded to Winthrop E. McGinley, of Connecticut.

At Sparrow's Point, Dr. James S. Woodward, chief surgeon of the Maryland Steel Company, died at his residence at Roland Park, May 28.

Professor S. F. Acree, of Johns Hopkins, has been appointed by the Government chief of the chemical division of the forests products laboratory, Department of Agriculture, in Madison, Wis.

By the announcement given out by Dr. E. P. Smith, resident physician of Mercy Hospital, fourteen new doctors have been appointed to the hospital, their terms to expire June 1, 1915.

Dr. George Hoyt Whipple, associate professor of Johns Hopkins University, has been chosen director of the Hooper Foundation for Medical Research by the Board of Regents of the University of California.

## DISTRICT OF COLUMBIA.

At Washington, June 1, the Army Medical School presented their diplomas to seventeen graduates. They will at once enter upon active field service as first lieutenants in the medical corps of the army.

## LOUISIANA.

At Jennings the authorities have moved the jail quarters to a rented building until those more suitable can be provided. Dr. Dowling has condemned the jail at Crowley as unsanitary and has written the authorities there that it must be made to conform to the legal standard.

At Baton Rouge the legislature indefinitely postponed a bill imposing rigid restrictions on the sale of chloral, opium and similar drugs.

The former pest house in New Orleans, a private enterprise, is no longer profitable because of the decline in the disease, smallpox, and is offered for sale.

Early in July two cases of bubonic plague were found in New Orleans and three days later a third case appeared. Proper measures were adopted, and up to this writing there were no more cases. Surgeon-General Blue conducted the campaign. There was no concealment.

At the recent closing exercises the New Orleans College of Pharmacy gave diplomas to twenty graduates. The gold medal was awarded to Ernest F. Buckley, of Slidell, La.

Dr. T. E. Wright, of Monroe, is spending several months at Johns Hopkins doing special work.

## KENTUCKY.

At Louisville, in accordance with the decision recently reached by the State Board of Control for Charitable Institutions, a hospital for the special treatment of tubercular patients at the Eastern Kentucky Hospital for the Insane is to be erected immediately, and a building permit for the new structure, which is to cost approximately $3,500, was procured at the office of the Commissioner of Public Works recently by Superintendent Joseph A. Goodson. The structure, which will be located immediately in the rear of the present infirmary, will be of brick, one story high, and contain four commodious rooms. Only white patients, both male and female, will be treated in the new department.

At Louisville, June 9, Dr. John Henry Thienan,

(Continued on adv. page XXVI.)

# Emetine Hydrochloride Mulford

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### Also Useful in Checking Hemoptysis. Acts by Constricting the Small Capillaries and Exerting a Specific Action on the Amoebae

AMEBIC DYSENTERY. Up to the present time reports covering 119 cases of Amebic Dysentery treated with Emetine have been published, with 108 cures. The remaining 11 cases were in very advanced stages, *the results representing practically 100 per cent of cures among the curable cases.*

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AMEBIC PYORRHEA AND THE EMETINE HYDROCHLORIDE TREATMENT. According to the researches of Allen J. Smith and M. C. Barrett,† pyorrhea alveolaris may be due to amebic infection, and in these cases beneficial results are frequently secured by the use of Emetine Hydrochloride.

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In tubes of 10 hypodermic tablets, each tablet containing 1-4 grain Emetine Hydrochloride.

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* New York Medical Journa , July 4, 1914

† A preliminary report read before the meeting of the Pennsylvania Dental Association, June 30, 1914.

*Literature on request*

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(Continued from adv. page XXIV.)

Jr., thirty-six years of age, died at 10:30 p. m., at his home, 2130 West Broadway, after an illness of three years, of tuberculosis. He is survived by his father and one sister.

## OKLAHOMA.

The State Board of Health is visiting the various cities of the state with its health exhibit. It remains at each point several days and the people everywhere display great interest in it.

At Oklahoma City, June 7, Dr. D. E. Cranz died at his home, 218 West Fifth Street. He leaves a married daughter, Mrs. Paul M. Pope, of Oklahoma City.

At Mangum it is reported that Dr. J. H. Barr, of Reed, engaged in a pistol duel with Mr. Henry Kistner and was shot twice in the leg and once in the arm. The leg had to be amputated.

Dr. J. C. Mahr, State Health Commissioner, has received a letter which the Custer County Medical Society is sending to every physician in the seventh congressional district, opposing the candidacy of George W. Cornell for Congress. The opposition is based on the fact that he fought the medical practice bill in the legislature of 1911.

At Wayne the McClain County Medical Society held an open meeting on June 9 at which the State Superintendent of Public Health and other visiting physicians gave interesting addresses.

In some school districts of the state the doctors have persuaded the school teachers to organize "toothbrush leagues" among the pupils with the object of promoting oral sanitation. Thus far the idea has been enthusiastically received.

## TENNESSEE.

Memphis is rejoicing that the medical department of the University of Tennessee, located in that city, now has a class A rating.

The sixty-third annual commencement exercises for the departments of medicine, dentistry and pharmacy were held at Rogers Hall Auditorium on the night of June 6. There were seventy-eight graduates in medicine, ten in dentistry and ten in pharmacy. The highest honor in medicine was given to Dr. S. E. Stroube, Oak Grove, Ky.

Dr. William Krauss, in an address before the City Club of Memphis, asserted that in his opinion many negro doctors report deaths as having occurred from malaria when other diseasse were really responsible. He showed that statistics assigning seventy-eight deaths from malaria per 100,000 inhabitants in Memphis, while the figures for New Orleans are nineteen, showed their unreliability.

At Knoxville it is decided that the Lincoln Memorial Medical College will be moved to Memphis to become a part of the University of Tennessee, but will retain its old name.

At Memphis, Dr. J. M. Kellar, one of the oldest and best known physicians in Tennessee, died June 1, aged 80 years.

In the June examination held by the State Board of Medical Examiners in Memphis, Knoxville and Nashville, only 148 applicants out of 355 succeeded in securing licenses to practice medicine.

It is proposed that the buildings that have been occupied by the medical department of the Lincoln Memorial University shall be converted into wards of a hospital or else a home for trained nurses. The medical college having moved to Memphis, its buildings are at present vacant.

Dr. S. T. Rucker, of Lynnhurst Sanitarium, Memphis, announces that he is preparing to build a fine modern sanitarium with the very best equipment.

## TEXAS.

### Houston Items.

Dairy products are allowed to be sold only under the most stringent regulations. All are regularly inspected and no deviations allowed.

Dr. C. C. Green, city health officer, has inspected all restaurants, hotels and other places where food is served and ordered the kitchens and food to be thoroughly screened. He reports that during the month of May there were 139 deaths in the city, of whom eighty-eight were white. There were six homicides, two suicides and two accidental drownings.

During the May school term 362 persons were temporarily excluded from the city schools by order of Dr. F. J. Slataber, supervisor of hygienics. His report to the superintendent showed a total of thirty-two persons with trachoma and nine with acute conjunctivitis.

Dr. James M. Arnold, aged 78 years, and a resident of Houston for the past twenty years, died June 10.

The Waco County Medical Society has urged the city commission to effect a consolidation of the two telephone systems operating in Waco.

### Dallas Items.

The Epworth League of Trinity Methodist Church has raised $1,000 to continue the support of Dr. Newton H. Bowman as a special medical missionary in Corea.

At Gainesville, June 4, the North Texas Medical Association met in the courthouse, about two hundred physicians being in attendance. An extensive and interesting program was discussed.

At Texarkana, the Northeast Texas Medical Association met June 4 in regular semi-annual session. Dr. R. H. T. Mann, of Texarkana, was elected President; Dr. G. A. Moseley, of Jefferson, Vice-President, and Dr. E. L. Beck, of Texarkana, Secretary.

At Fort Worth the Medical College of Texas Christian University gave diplomas to eleven graduates in medicine and six in pharmacy.

At San Antonio the City Council has passed a resolution making it an offense to kill bats. Dr. Charles Campbell, who originated the idea, stated that the bats had cleared the community where he lived from mosquitoes. Dr. Shropshire, of the health board, offered an amendment allowing bats to be killed in private residences.

At Longview Junction, June 18, Dr. Louis Van Swearingen died of hydrophobia, having been bitten by a dog six weeks previously.

The Board of Regents of the University of Texas have appointed fourteen recent graduates in medicine to positions in various state institutions.

(Continued on adv. page XXVIII.)

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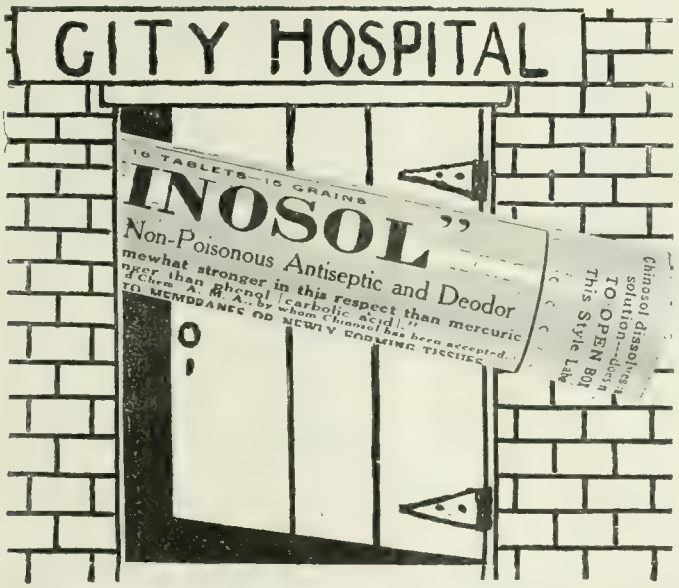


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(Continued from adv. page XXVI.)

VIRGINIA.

Dr. E. C. Levy, chief health officer of Richmond, says that the supply of milk furnished for that city is the best in the world and has a national reputation. Out of forty herds of cattle tested, 20 per cent reacted to the tuberculin test and were rejected. He is not a believer in the infection of human beings with bovine tuberculosis.

The first annual commencement of the consolidated Medical College of Virginia was held in the city auditorum of Richmond on the night of June 2. Fully 3,000 people were present. The address was delivered by Dr. Stuart McGuire. There were more than one hundred graduates in medicine.

Dr. S. C. Mitchell, who during the past year served the Medical College of Virginia as its President has accepted a call to the Delaware Medical College. He will not go to Newark, Del., until after the college election.

At Roanoke fifty-two physicians, members of the Southwestern Virginia Medical Society were present at the opening, June 10. A public address was given by Dr. R. H. Garthwright, of Vinton, in the Y. M. C. A. auditorium.

The University of Virginia graduated seventeen medical students on Tuesday, June 16.

At Wilmington the medical inspection of school children was conducted by experts of the United States Public Health Service. Dr. C. W. Stiles, assisted by sixteen other experts, conducted the work. It is planned to complete the mental and physical examinations of the white children by October 1.

At Richmond the hot weather has caused great distress on account of the scarcity of ice and many babies will die unless the shortage is relieved. Strenuous efforts are being made to supply the most urgent needs, but it is estimated that over 400,000 pounds will be needed.

Surgeon Talliaferro Clark, of the United States Public Health Service, in the Public Health Reports, June 5, speaks of inspection made in twenty-three counties of the state, in which 20,848 persons were examined, among them 340 cases of trachoma were found, or 1.63 per cent.

WEST VIRGINIA.

At Wheeling, City Health Commissioner W. C. Eyzler is using every effort to induce the people to boil their drinking water. On June 8 he stated that the typhoid conditions were serious and that actual tests of the water showed the presence of the colon bacillus in alarming quantities. There were six deaths in the city from typhoid in May.

At Charleston the city chemist made tests of the ice cream furnished to the people by dealers. Of seventeen samples examined only one was found fit for use. Other samples showed from 25,000,000 to 6,000,000 bacteria to the cubic centimeter.

William L. Grant, M.D., one of the oldest physicians in the state, died at his home in Gratton, June 2, aged 92.

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Showed:

**80% RECOVERIES and IMPROVEMENTS**

**(31 and 12 cases respectively)**

Of the second clinic, 80% showed an increase in red cells of from 250,000 to 1,175,000; 73 1-3% showed an ultimate marked increase in hemoglobin. The average decrease in blood pressure was 15 5-7 mm.

Uniform success with the "Standard" Radium products is assured by reason of their therapeutically accurate, carefully standardized guaranteed Radium ELEMENT content.

Supplied upon prescription from our laboratories only.

**Literature and Complete Clinical Records upon Request.**

**Radium Chemical Company - Pittsburgh, Pa.**

# The Chicago Laboratory

Is now located in its new home, in the New Marshall Field Annex Building,
Rooms Nos. 2006 to 2012

**25 E. Washington Street.**

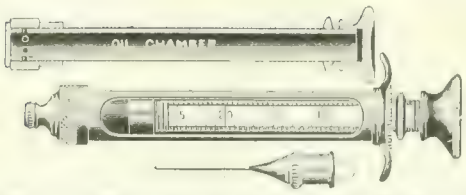
We extend to our many friends and patrons a most cordial invitation to call and inspect our new modern Laboratory, at their earliest opportunity.

## Chicago Laboratory

RALPH W. WEBSTER, M. D. PH. D., Director Chemical Department.

THOMAS L. DAGG, M. D., Director Pathological Department.

C. CHURCHILL CROY, M. D., Director Bacteriological Department.




Our Hypodermic Syringes all have the new style HOLLOW Pistons which are filled with oil CLEAR TO THE OUTER ENDS, so that the Packing NEVER dries out, the Pistons NEVER work hard, the Syringes NEVER leak, and the oil being 5 per cent carbolated keeps the syringes automatically aseptic, without boiling; if broken, these Syringes can be repaired on the spot by the Physician himself. Pistons of old-style Syringes replaced with our new HOLLOW Pistons and returned promptly.

**THE W. S. CO., Canton, Ohio.**

N. B.—Send for our Descriptive Catalogue and also for free sample of our Gold Medal SPECIAL NEEDLES.

**"WEISSFELD BRAND" WASHABLE COATS**
**For Dentists, Doctors, Druggists, Jewelers, Osteopaths, Etc.**

Made to order, or ready made. Seventy-five different materials to choose from. Write for styles, materials and prices, free upon request. Parcel Post prepaid to all parts of the world. Smoking Jackets, Dressing Gowns, Bathrobes and Hospital Uniforms a specialty.

**WEISSFELD BROS.,**
Mfrs. of Clothing and Uniforms of every description.
**332 Broadway, New York City, N. Y.**
**Special**—Suits or Overcoats made to order at $11.75. Write for samples.

# CLASSIFIED ADVERTISEMENTS

Advertisements under this heading will cost 75c for fifty words or less, payable in advance. Additional words, 1½c each. An additional charge of 25c is made to those having replies come care S. M. A. All replies received in our care will be promptly forwarded. **Southern Medical Journal, Mobile, Ala.**

FOR SALE—Wantz (Victor) X-Ray Machine, completely equipped; all accessories, including villard tube, X-Ray tubes, tube stand, fluroscope, shadow box. Guaranteed in perfect working order. A bargain for a man who does not wish to specialize in X-Ray work. Address 614 M, care Southern Medical Journal.

DOCTORS' LOCATIONS—Oklahoma. Several towns without doctors. No practices to sell. Reciprocity with 15 states. We want a radiologist for city of 40,000; also assistant for busy practitioner—good salary. We cover the State. Oklahoma location list for 50c. Physicians' Exchange, P. O. Box 23, Oklahoma City, Okla.

A physician and surgeon in a fine growing little North Georgia city of fifteen thousand inhabitants with a good practice, at present location for twenty-five years, wants young and active well qualified man as partner. Address 400 H, care Southern Medical Journal.

FOR SALE—Central Missouri—property and unopposed $3,000 practice in rich agricultural district of Missouri and Osage River valleys; established over 20 years; examiner 7 life insurance companies; surgeon railroad company; local register vital statistics; German community; collections A1; price, $3,700; wish to retire. Address 450 S, care Southern Medical Journal.

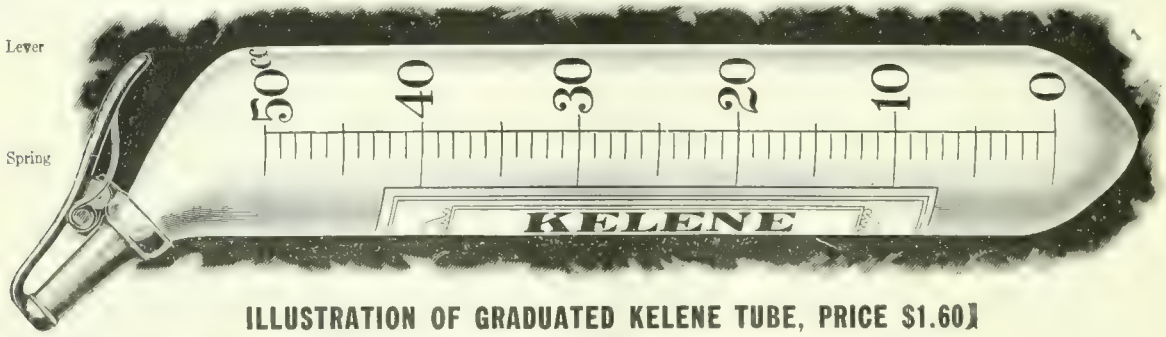



**ILLUSTRATION OF GRADUATED KELENE TUBE, PRICE $1.60**

FRIES BROS., Manufacturers, 92 Reade Street, New York.

# GENERAL ANAESTHESIA

With "Graduated Kelene" also as a preliminary to Ether

When Applied With Our

**GLASS AUTOMATIC SPRAYING TUBES**

does the work quickly, pleasantly and thoroughly

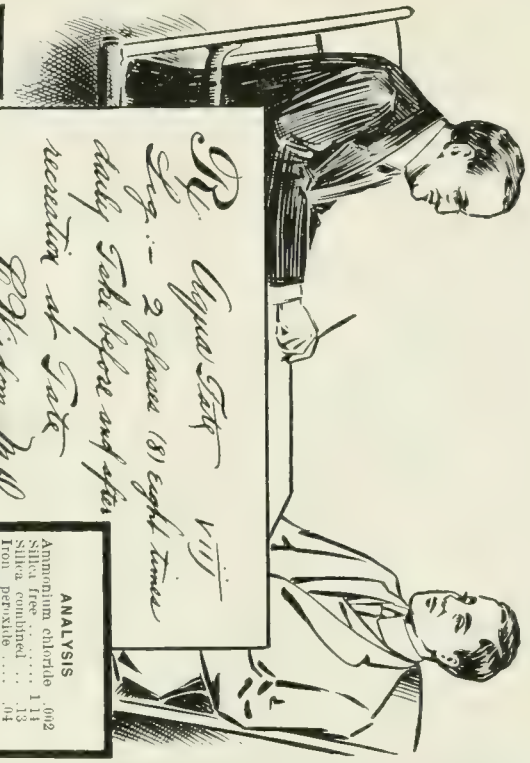
**NO STEAM VALVE IS REQUIRED**

Simply press the lever and the Automatic Sprayer does the rest.

**GLASS TUBES ALONE INSURE ABSOLUTE PURITY**

Sole Distributers for the United States.

**MERCK & COMPANY New York Rahway St. Louis**




# TATE SPRING HOTEL

TATE SPRING, TENN.

That's the one prescription that is *transferable*, the only prescription that is good for everybody—you and your family, your patients and their families. No matter what the diagnosis—neurasthenia or just plain "nerves"; dyspepsia or just plain "grouch"—Tate Spring water is the prescription.

## TATE SPRING WATER

Tate water, we sincerely believe, is the most remarkable stomach water in this country. Won't you write for booklet giving rates and telling about the wonders of Tate Spring and Tate Spring water?

**ANALYSIS**

| | |
|---|---|
| Ammonium chloride | .002 |
| Silica free | 1.13 |
| Silica combined | 1.13 |
| Iron peroxide | .04 |
| Iron peroxide | .09 |
| Aluminum oxide | .76 |
| Calcium sulphate | 54 |
| Calcium carbonate | 21.50 |
| Magnesium sulphate | 35.58 |
| Sodium sulphate | 4.10 |
| Sodium chloride | .13 |
| Sodium nitrate | .02 |
| Potassium chloride | .90 |
| Iodide | .04 |
| Lithium chloride | .04 |
| Calcium phosphate | .03 |

**PRICES**

F. O. B., Tate, Tenn.
Case 1 doz. 1-2 gallon bottles $3.00
Demijohn (glass) 3 gallons 2.50
Barrel 30 gallons 5.00
1-2 Barrel, 17 gallons 3.50

$1.00 credit for glass vessels returned for refilling. Bill of Lading is mailed showing freight paid. Terms, Cash.

50% Better

# Prevention Defense Indemnity

1 All claims or suits for alleged civil malpractice, error or mistake, for which our contract holder,

2 Or his estate is sued, whether the act or omission was his own

3 Or that of any other person (not necessarily an assistant or agent)

4 All such claims arising in suits involving the collection of professional fees

5 All claims arising in autopsies, inquests and in the prescribing and handling of drugs and medicines.

6 Defense through the court of last resort and until all legal remedies are exhausted

7 Without limit as to amount expended.

8 You have a voice in the selection of local counsel.

9 If we lose, we pay to amount specified, in addition to the unlimited defense.

10 The only contract containing all the above features and which is protection per se. *A sample upon request.*

## The MEDICAL PROTECTIVE CO.
*of* Fort Wayne, Indiana

**Professional Protection, Exclusively**

# *What We Do*

Everything that a fully equipped chemical, bacteriological and medical laboratory should be able to do.

| | | |
|---|---|---|
| **WASSERMANN TEST,** | | **$5.00** |
| Urinalysis, complete | - - | $1.50 |
| Sputum and Smears | - - | $1.00 |
| Gastric contents, complete | - - | $3.50 |
| Tissues, pathological examination | - | $5.00 |
| Autogenous vaccines | - - | $5.00 |

Fees for other work on application and in keeping with the above low prices. Send for our fee table.

***Accurate Dependable Quick Results***

## Accuracy Laboratories

1724 and 1726 West Madison St.
CHICAGO, ILL.

## MAKE YOUR DOLLAR PRODUCE MORE IN A NEW YORK CITY HOTEL

**$2.50** PER DAY A pleasant room with private bath, facing large open court.
(Not one room, but one hundred of them.)

**$3.00** PER DAY An excellent room with private bath, facing Street, Southern exposure.
(Not one, but eighty-seven of them.)

Also attractive Room without Bath for **$1.50** per day. The restaurant prices are most moderate.

### *Location*

**In the Heart of Things**

One minute from 5 of the largest department stores.
Five minutes' walk from 19 principal theatres.
Within a block of the Fifth Avenue shopping district.
Every line of transportation passes the door.
Fifth Avenue Bus lines and principal surface lines.
The Hudson Tubes across the street.
Elevated Railroad Station across the street.
Subway Station three minutes away.
Grand Central Station within seven minutes.
Pennsylvania Railroad Station just one block away.

*For convenience one could ask no more.*

### *The Hotel*

600 ROOMS
400 BATHS

**Everything new and modern. A Five Million Dollar Hotel. Equipped to satisfy the most exacting taste.**

ALL BAGGAGE TRANSFERRED FREE TO AND FROM PENNSYLVANIA STATION

**THE HOTEL MARTINIQUE**
ON BROADWAY, 32ND TO 33RD STREETS, NEW YORK

CHARLES LEIGH TAYLOR, President — WALTER CHANDLER, Jr., General Manager
WALTER C. GIBSON, Vice-President

THE CAPITOL

"Hotels may come and Hotels may go," but the Powhatan has come to stay.

Located on famous Pennsylvania Avenue, overlooking the Executive Mansion, within easy access to all things worth while, coupled with the beautiful view of the Potomac and adjacent scenery, makes the Hotel Powhatan the most desirable and attractive hotel in Washington.

**EUROPEAN PLAN.**
**Rooms, detached bath, $1.50, $2.00 up.**
**Rooms, private bath, $2.50, $3.00 up.**

Write for booklet with map.
CLIFFORD M. LEWIS,
Manager.



# HOTEL ANSLEY

## Atlanta, Ga.

**The South's most beautiful and most modern hotel.**
**Open May 12, 1913. FIREPROOF. 306 Bed Rooms.**

LOCATED IN THE VERY HEART OF THE CITY AND CLOSEST TO ALL THEATRES, OFFICE BUILDINGS, STORES, AND IN THE CENTRE OF THE HOTEL DISTRICT.

**A MODERN HOTEL CONDUCTED UPON THE MOST LIBERAL BASIS AS TO ROOM AND CAFE CHARGES. OUR MOTTO "TO PLEASE"**

Our rooms are magnificently furnished in solid mahogany and the prices are cheaper than asked for similar rooms anywhere in the United States. Rooms with running water and private toilet $1.00 per day; with connecting bath, $1.50 per day; with private bath, $2.00 per day and up. Also fine sample rooms for traveling men from $2.00 to $3.00 per day.

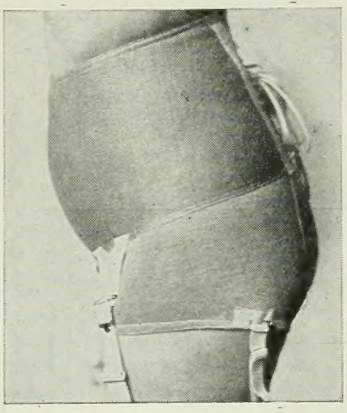
WE CATER ESPECIALLY to the COMMERCIAL and TOURIST TRADE

Reservations should always be Made in Advance Whenever Possible

**J. F. LETTON, Mgr.** **J. B. POUND, Pres.**

# The B-P Abdominal Supporter

Made to measure—not a stock affair.



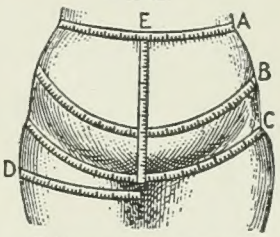
A new idea—cool—comfortable. Fits perfectly. Does not slip. A support—not a compress. No long wait. Indicated in

**Pregnancy**
**Obesity**
**Hernias**
**Post-operative**

**We Make a Special Support for Entero-optosis**

Write us for prices and literature

State whether for man, woman or child.




Take snug measurements over the skin.

A—Waist.
B—Abdomen.
C—Hips.
D—Thigh.
E—Height.

## BOLEN MANUFACTURING COMPANY

**301 BOSTON STORE BLDG., OMAHA, NEB.**

**Establish an Enviable Professional Skill in the Treatment of**

## Uric Acid Diathesis

**gout, and other therapeutically troublesome stages of chronic rheumatism, by directing the regular use of**

## PLUTO WATER

**in connection with the dietetic regimen.**

Pluto is specifically indicated in auto-intoxication and the various forms of intestinal stagnation. Hygienically bottled.

**ANALYSIS OF PLUTO CONCENTRATED**

| Parts per 1000 | |
|---|---|
| Sodium Sulphate | 50.005 |
| Magnesium Sulphate | 30.971 |
| Calcium Sulphate | 2.817 |
| Sodium Chloride | 2.503 |
| Magnesium Carbonate | .352 |
| Iron oxid and alumina | .016 |
| Silica | .005 |
| Total solids | 86.669 |

The water was excellent from a sanitary standpoint. Respectfully submitted,

**The Columbus Laboratories,**
January 26, 1907. **Chicago.**

**Samples to Physicians upon request.**

Clinical data convincingly substantiating the claims made for Pluto and delightfully descriptive of the superior advantages of America's famous Spa, supplied promptly by

## FRENCH LICK SPRINGS HOTEL CO.

**FRENCH LICK, INDIANA**

# The Leucodescent Therapeutic Lamp

is the standard apparatus for the therapeutic application of light energy. It can be used with surprisingly satisfactory results in more than three-fourths of the cases that occur in a general medical practice.

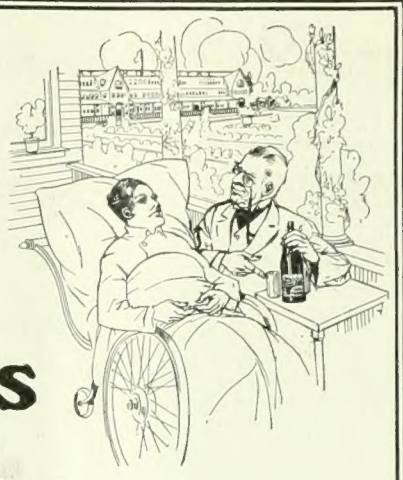
One physician says of the Leucodescent: "It will make you more friends than any other apparatus you can install in your office."

Let us tell you our plan by which you can install the Leucodescent now without increasing your present expense. Send for our booklet No. 9 and you will receive more data on light therapy than can be found in all text-books combined.

## The Leucodescent Lamp Co.

**P. O. Box 258** **Chicago, Ill.**

# The doctor and the fever patient



*Doctor*—And now we'll see about what you want to eat.

*Patient*—Oh, doctor, don't talk about eating! Nothing tastes good, and I'm tired trying to eat to accommodate the nurse—and don't let me see milk again.

*Doctor*—Well, I have heard that before, and I am going to suggest something different—how would you like to try

# Welch's
## Grape Juice

*Patient*—Welch's! I wish I COULD have some.

*Doctor*—Why, you just CAN have some. And then some more. I've rarely known it to fail to please. The nurse must give it to you in a small, thin glass, pretty well chilled, and with charged water if you prefer.

*Patient*—Tell them to hurry with it, doctor. I remember how refreshing Welch's is on a hot summer's day, and I know its tart-sweet flavor will go right to the spot now. I wish all medicine tasted as good.

Should you not know Welch's both by reputation and quality, doctor, we shall be glad to send you a pint bottle with our compliments, through your druggist, if you will give us his name. Also it will be a pleasure to send you some of our special literature which we think will interest you.

The Welch Grape Juice Company - - - Westfield, New York

**We exercise the most scrupulous care in the manufacture of our**

# Pharmaceuticals

**A bottle sealed from our laboratory is an assurance of quality within that would be hard to express in words; a trial only could adequately express.**

Van Antwerp's
THE BEST ONLY

**PHARMACEUTICAL LABORATORY**

**VAN ANTWERP BLDG. MOBILE, ALA,**

# Glycerophosphate in Solution Change Chemically

For protection against such instability we offer

## Tablets Glycerophosphates Compound P-M Co.

Each tablet contains:

Sodium Glycerophosphate 1 gr.
Calcium Glycerophosphate 2 gr.
Iron Glycerophosphate 1-8 gr.
Strychnine Alkaloid 1-120 gr.

**PITMAN-MOORE COMPANY**
**INDIANAPOLIS**

# A Temporary Diet for Infants in Summer Diarrhea

Mellin's Food
*4 level tablespoonfuls*

Water (boiled, then cooled)
*16 fluidounces*

Each ounce of this mixture has a food value of 6.2 calories—affording sufficient nourishment and in a form readily assimilable.

# Adrenalin in Hay Fever

In the treatment of vasomotor rhinitis—or hay fever, as the disorder is better known—Adrenalin is one of the most satisfactory agents at the command of the practitioner. While not a specific in the strict sense of the word, it controls the symptoms very effectually and secures for the patient a positive degree of comfort.

## Solution Adrenalin Chloride

and

## Adrenalin Inhalant

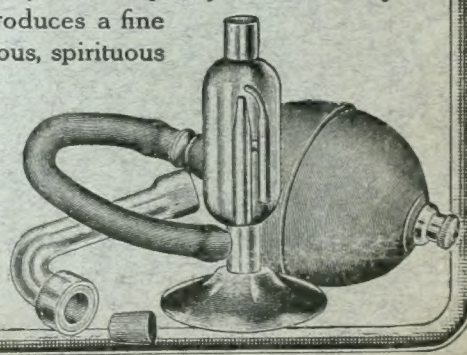
are the preparations most commonly used, being sprayed into the nares and pharynx. The **Solution** should be diluted with four to five times its volume of physiological salt solution. The **Inhalant** (preferred by some physicians because of its oily base, which imparts an emollient effect and renders the astringent action more enduring) should be diluted with three to four times its volume of olive oil. Both are effectively administered by means of our Glaseptic Nebulizer.

Supplied in ounce glass-stoppered bottles.

◆ ◆ ◆

### THE GLASEPTIC NEBULIZER.

This is confidently believed to be the most practical atomizer ever offered to the medical profession. It combines asepsis, convenience, efficiency and simplicity. It is readily sterilized, the working parts being *one piece of glass.* It produces a fine spray and is suited to oils of all densities, as well as aqueous, spirituous and ethereal liquids. Price, complete (with throat-piece), $1.25.



**Write for our Literature on Hay Fever.**

## Parke, Davis & Company

**Home Offices and Laboratories, Detroit, Mich.**